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OUR competition of designs for a three-thousand-dollar house, which closed last Saturday, proves to have been a remarkably successful one, and a very large number of drawings, with the accompanying specifications, bills of quantities and estimates, in due order, have been received. Among so many, it is only fair to presume that a considerable portion will possess features of interest to our readers, and we shall reserve a much larger space in our issues of the next few weeks for the publication of the best designs and specifications than we have hitherto ventured to devote to these competitions, trusting that the general importance of the subject, as well as the unusual merit of many of the drawings, will serve to excuse any temporary monotony in the character of our illustrations. The award of the prizes will be made in due time by the jury already announced, but we shall not wait for that before selecting for publication such designs as may seem to us suitable.

IN providing with such liberal hand for the pleasure of those who take an interest in the subject of small houses, we wish to remind our readers, in fairness to the authors of the plans presented in our illustrations, that the interest which they excite ought not to go so far as to lead any one to appropriate any to his own uses without due recognition of the rights of those to whose skill they owe their attraction. For the greater benefit of the young men who compete for our prizes, as well as of the larger number who study with eagerness the work of their more energetic fellows, we required in the present competition a very complete set of drawings and documents, with the idea of directing the attention of the less experienced contestants particularly to these necessary, though unattractive details of practice, and we should be very sorry if the consequent completeness of the designs should tempt any one to borrow them for execution without asking leave. If, as we imagine will be the case in more than one instance, persons desiring to build should find among the plans some which just fulfil their wishes, we can, upon request, put them at once in communication with the authors, and predict that any correspondence so opened will prove a source of mutual satisfaction and profit.

THE sculptor, Clark Mills, who has enjoyed a reputation second in its way to none among the profession in America, died recently in Washington, where most of his later life has been spent. The history of his career is a singular one, and although hardly that of a great artist, at least gives a high idea of his courage and ambition. He was born in the interior of New York State in 1815, and losing both his parents while very young was taken in charge by relatives and apprenticed to a mill-wright. He soon forsook this trade for that of a plasterer, which he practised for several years, mostly at the South, first in New Orleans, and then in Charleston. Like many workmen who have risen to distinction in other professions, he devoted his leisure time to unassisted study of sculpture, modelling for himself such things as he fancied. Such study is apt to engender an inordinate vanity in the student, too ignorant to understand the superiority of the work of better-trained men, and Mills seems to have had something of it, for without other preparation than his own aimless essays, he undertook to execute a bust of John C. Calhoun in marble. His first attempt only excited laughter, but, more determined and persevering than most men, he made another, which was considered sufficiently good to be purchased for the city of Charleston, the sculptor being also rewarded with a medal for his success. After this he found steady employment in modelling portraits of local celebrities, and gaining many friends, a subscription was raised to send him to Europe for study. On his way to embark, he spent a few days in Washington, visiting the museums and public buildings, and while there was asked to make a design for an equestrian statue of General Jackson, which it was proposed to erect in Lafayette Square. Mills had never seen an equestrian statue, but, like a true American, convinced that he could make one if he only tried, he abandoned his voyage, and returning to Charleston set himself at work upon his model, which was submitted at the appointed time, and immediately adopted and carried into execution. The statue as erected is familiar to every school-boy from the pictures of it which adorn his geographies and histories, and although it has a certain grotesque air, the whole figure, weighing fifteen tons, being balanced on the hind feet of the horse by an ingenious disposition of the forelegs and tail, is by no means the worst statue in Washington. Soon after this he was commissioned to carry out a design for a still more important work, the equestrian statue of Washington, in the so-called Washington Circle, far out on Pennsylvania Avenue. This, while an animated and interesting design, is much more refined than the Jackson figure, and forms one of the most agreeable objects in a city not renowned for its artistic triumphs. Mills's last important work was the execution, from Crawford's model, of the great statue of Liberty on the top of the Capitol. How much of the design is Crawford's, and how much Mills's, it might not be easy to say, but as completed, the figure meets with very considerable success the requirements of its trying position.

PARTICULARS of the burning of the Newhall House at Milwaukee, in which nearly a hundred persons lost their lives, serve only to confirm the popular impression as to the unfitness of the building for the uses to which it was put. With even the greatest anxiety to avoid unjust condemnation of a construction which may have been no worse than many others, the simple fact remains, that a hotel six stories high, which is completely destroyed in forty-five minutes from the first breaking out of the fire, never can have been fit for occupancy as a public-house. We know that scores of seaside and country hotels are in a condition even worse, if possible, but these are beyond the pale of building-laws, and persons who choose to stay in them know that they do so at the risk of their lives. City public-houses, on the contrary, are assumed to be subject to some sort of supervision, and it is quite time that this belief should be justified.

THE coroner's jury which investigated the Calender-Street fire in Providence, at which several persons lost their lives, has concluded its long and faithful inquiry, completing its labors by a few wise recommendations for legislative and municipal action, which we trust will be complied with before their occasion is forgotten. One of the first of these advises that the use of naphtha stoves should be totally prohibited, and that stringent regulations should be enforced in regard to the storage and use of the light hydrocarbons. Another, the best of all, points out the necessity for placing the inspection of buildings in the hands of some person unencumbered with other duties, and absolutely free to enforce to the letter the provisions of the law in regard to building and the maintenance of fire-escapes. It is much to be hoped that the warning will be heard, and that the city and State may be provided henceforth, not only with judicious and explicit laws, which are easily obtained, but with what no city has yet secured, a thorough and efficient mode of executing them.

A CORRESPONDENT of the *Chicago Tribune* makes a suggestion which is worth considering, although the principles which it involves are far from being such as should govern the construction of new buildings. Observing, as every

one has, that the elevator-shafts in manufacturing or mercantile buildings serve in conflagrations to carry the fire rapidly through the building, he asks why the natural tendency of the smoke and heated air to seek the elevator-shaft might not be utilized by extending the shaft as a fire-proof chimney through the roof, with a glass skylight over it, or some other device which will open automatically in case of fire, thus creating a powerful exhaust current which will retain the flames in the shaft instead of allowing them to burst out at every story, as they do where there is no vent at the top. Such an arrangement as this would have the further advantage of establishing a definite course for a fire originating anywhere in the building, which would enable the firemen to follow and extinguish it with far greater certainty than in buildings where the opening of a window or some other trifling circumstance may draw the course of a conflagration, hidden by its own smoke, in various directions about the different stories. Of course, the best way of all would be to have the elevator-shaft securely closed, so that fire could not reach it from any room, still less ascend through it to rooms above, and if such construction were joined to simple and solid floors and ceilings it would be possible to retain an incipient fire within the story in which it originated long enough to admit of extinguishing it there; but it will be years before such planning becomes general, and any palliative for the present bad habits of construction is to be welcomed.

A NOVEL scheme is proposed by some persons in New York, who have formed a company for the purpose of constructing an underground roadway under the City Hall Park, from the west side of Broadway, near Murray Street, to the east side of Park Row, near the passage-way leading to the Brooklyn bridge. No vehicles are to pass through this subterranean avenue, but it is to be used entirely for the convenience of foot-passengers who may desire to cross the Park without running the gauntlet among the carriages and omnibuses of Broadway, and the street-cars of Park Row. The use of it is to be given to the public free of charge, but the company proposes to reimburse itself by constructing and renting stores on each side of the passage, lighted by means of a roof of iron and glass. The whole cost of construction is estimated at five hundred thousand dollars. There may be some question whether such an arcade will not interfere with the tunnel railways, one of which is laid out through Broadway and the other through Park Row, but it is probable that the latter are far enough below the surface to pass altogether beneath the arcade.

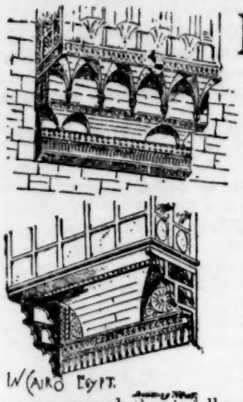
A BILL is now before Congress providing for the erection of monuments upon the battle-fields of the Revolution, which authorizes an appropriation from the Treasury of five thousand dollars towards the cost of a monument on any of these battle-fields, provided the people of the locality shall have already contributed five thousand dollars for the same purpose. If the bill is passed, there can be no doubt that its provisions will be taken advantage of to provide suitable memorials upon nearly every one of these historic spots, and it is much to be desired that they may be as artistic in form as they will be honorable in their associations. Within a year or two there have been signs that in such matters this country is about to emancipate itself from the conventional models, and no better opportunity could be found than an extensive national movement of this kind for the development of a truly interesting form of art.

THE ordinance for the registration of plumbers in Boston was passed by the City Government some weeks ago, but inadvertently repealed soon after in connection with another matter, so that the various items of the bill have come again under discussion, but will undoubtedly be reënacted about in their present shape. It is a little singular, considering the common complaint of the carelessness of architects in regard to such details, that from the first the architects of the city have interested themselves in the proposed regulations, and a committee of them has acted with the committee chosen by the plumbers in revising the text of the bill for submission to the City Government. The rules, although less detailed than those adopted in New York, are stringent as far as they go, and if well enforced will do much to restore the reputation of a city which is known as containing some of the worst, as well as the best plumbing-work in the country. It is important in drawing up such laws not to depart much from the accepted practice of the best workmen, and the authors both of the New York and Boston codes have wisely kept this fact in mind; but we cannot help hoping that in the next city which adopts a plumbing law the use of double-thick soil-pipe will be made obligatory under all circumstances. In view of the results obtained by Colonel Waring and Mr. Gerhard, with the hydrostatic test, which show that it is next to impossible to make a tight caulked joint in single-thick pipe, the necessity for employing pipe strong enough to resist the strain of proper caulking without splitting the hubs is too obvious to require comment; but even architects, and still more plumbers, shrink from the greatly increased expense of double-thick piping, and until some community shall show nerve enough to make its use imperative, such house-owners as are not under the care of pretty resolute architects or other professional advisers will content themselves with work which cannot possibly be durable.

THE stockholders of the Keely Motor Company have now a prospect of seeing their money used for something besides the fast horses which their principal is said to have purchased with the funds in his hands. What has become of the original machine we do not know, but the locomotive which was to be built on the same principle is in the course of rapid construction. According to the *Commercial Advertiser*, all the larger castings have already been delivered. The heaviest of these is the bed-plate, which measures twelve by six feet, and weighs forty-four hundred pounds. Next to the bed-plate are the two "pulley-blocks," which weigh three thousand pounds each; and the third heavy piece is the shaft, which is of steel, nine inches in diameter, and over ten feet in length. Just how a locomotive with a shaft ten feet long and two three-thousand-pound pulley-blocks is intended to work we confess ourselves unable to comprehend, but the account goes on to say that "as there is no cylinder or connecting-rods set at different angles there will be no rocking such as exists on the present locomotive;" and further, that "this engine has no dead centres, no exhaust, no heat, no cinders, and as claimed by Mr. Keely, no expense for running." The last extraordinary and important circumstance seems to be explained by the assertion that "the movement is rotary." As soon as the locomotive is completed, it is to be tried upon the Pennsylvania Railroad.

PHILADELPHIA seems to have carried away the palm, even from Jersey City, in the matter of foul drinking-water, to judge from the description of some recent occurrences. For several weeks a taste more than ordinarily nauseous has been detected in the Schuylkill water as supplied to the houses, and various theories have been advanced to account for it, but none seemed just to suit the circumstances, and the citizens generally contented themselves with filtering out the insoluble components of the mixture, and drinking the rest. After a time, however, according to a correspondent of the *Public Ledger*, a boy of an investigating turn of mind seems to have taken it into his head to venture out on the ice which covered the river, for the purpose of making some experiments. The correspondent writes that this youth "was seen to cut a hole in the ice with his pen-knife, and then to cover the hole with his finger for a short time. He then lighted a match, and removing his finger applied the match to the opening in the ice, when a bright flame about a foot high shot up and continued to burn for some time." On receipt of this communication a reporter was sent from the *Public Ledger* office to repeat the experiment, but proved unable to obtain similar results. However, he found two boys who said that the evening before they had seen a young man on the ice, boring holes and "producing any quantity of bright flames a foot high," and was forced to conclude that the water had lost a part of its spirituous quality before his visit. Not being able to set it on fire, he contented himself with tasting it and found it "offensive," and "strongly impregnated with coal-oil," accounting for this by the assertion that the water-company was drawing its supply from certain remote reservoirs, which received also the "refuse of coal-oil refineries." On the whole, the water of the Passaic, with its compound flavor of petroleum, carbolic acid, sewage and arsenic, must perhaps be acknowledged to possess still the higher bouquet, but for real strength the combustible Schuylkill water surpasses any which we ever knew to be used as a public supply.

KERWAN.



IN the centre of the Regency of Tunis, thirty-six miles from the sea, on a vast rolling plain, lies Kerwan, a city that has played an important part in the history of the civilized world, but since its glorious epoch has gradually fallen into decay and become almost forgotten. It was founded in the year A. H. 50 [A. D. 672], by Caliph Okba ibn Nafi, who conquered the country and built the city as a military stronghold. By degrees it grew powerful, and sent out armies that conquered Spain, which it held for five and one-half centuries; conquered Malta, Sicily and Southern Italy; then it gradually declined, lost one by one its conquered provinces, had several dynasties of caliphs, who held the country till A. H. 817 [A. D. 1439], when by internal dissensions it had grown so weak that it fell an easy prey to the Bey of Tunis.

Kerwan is generally known as the Holy City of Africa by the Moslems, which title it has probably had only since the restoration of the Grand Mosque, A. H. 402 [A. D. 1024]. The universal tradition that Kerwan has been a holy city from its foundation is entirely without proof. Jewish and Greek tombs have diligently been searched for by scientists to prove the contrary, but without success, and it has long been the centre of religious fanaticism and bigotry in North Africa. Before the French occupation it was inhabited by Mohammedans only. Pilgrimages were made hither by the Faithful, while Jews were not permitted to approach nearer than two miles from the city walls. The few foreigners that ever visited Kerwan entered the city under the special permission and protection of the Bey or prime minister. The mosques and sanctuaries being religiously closed to them, their stay was limited to a few days only. At present, however, since the entrance of the French, the doors have been thrown open to the light of the civilized world, showing some of the finest specimens of Moorish architecture existing. One of the principal features of Kerwan is the vast quantity of marble columns the city contains, which must amount to several thousands and are to be seen everywhere: to support the roofs of all structures of any size; on the corners of houses, to keep the brick from being knocked off; in courts; in olive-mills, to crush olives; — no house is complete without them. They are to be seen to the greatest advantage in the Grand Mosque, which contains six hundred and eleven, which are the finest and largest of them all. The vicinity abounded in Roman ruins, of which scarcely a vestige remains. There are a great number of mosques in the city, of which only a few are worthy of inspection; the majority are simply prayer-rooms, having a door opening directly on the street; some have a small vestibule for ablution before entering the mosque. The prayer-rooms generally have arched ceilings supported by columns. These small mosques are usually open only at the prayers at and after sunset; few have minarets. The Grand Mosque is the principal monument of the city. It is situated in the north-west corner, on the highest point of ground in the city, and from the minaret a clear, uninterrupted view may be had in all directions. The enclosure of the mosque is a vast quadrangle, which may be divided into two parts, the prayer-room and court; this is surrounded by a high wall, which, with its massive buttresses, has somewhat the appearance of the walls of a city or fort from the exterior. There are eight doors for entrance, three on the north side, four on the south, and one on the east end. Midway in the wall of the west end is the solid and imposing minaret. The prayer-room occupies a little over a third of the entire space enclosed. The interior measures one hundred and twenty-five feet by two hundred and fifty-six feet long. It has a slightly inclined flat roof, supported by one hundred and ninety-four columns. The prayer-room, to facilitate description, may be divided into a central nave, with a dome at each end and eight aisles on each side; the nave being larger than the aisles, having larger columns, and not being crossed by arches. The columns of the aisles are set at regular distances from each other and support horse-shoe arches crossing at right angles. The columns of the nave are double; in the centre triple; and at each end, to support the domes, five are clumped together on each side. Above the columns is a row of arches on each side, above which is cut ornament in plaster, and the ceiling chandelier-pieces are of the same. The prayer-chamber is separated from the court by seventeen sets of doors. Those at the ends of the aisles are double, made of painted wood, each of an original design: those at the end of the nave are quadruple, larger than those of the aisles, and are beautifully carved with delicate arabesques. The small door on the east end is the private entrance of the Bash Mufti, or high priest. It first opens on a small court, thence through a small passage having on each side a pair of fine old sculptured and perforated wooden doors, opening on a library and a closet for manuscripts. At the end of the passage is a small door, opening on the prayer-room, encased by three pieces of Roman frieze, with heavy ornament cut in bold relief; this opens on a small private prayer-room and is separated from the large prayer-room on three sides by a sculptured and perforated partition of wood about ten feet high, around the top of which runs an inscription in ornamental Kufic, containing quotations from the Koran, exquisitely chiselled. The perforated part of the partition is a lattice-work of turned wood set close together; the whole of it is divided into panels, for the most part carved. At the east end of the nave, under the dome, is the niche of the Mihreb, the surface of which is covered with perforated filigree work, very gaudily painted. Above the niche the wall is covered alternately with tiles and painted work in squares. The tiles are old Rhodian, and take a reflection of gold with the light, and are each of a different design. The dome is ornamented with plaster stucco at the base, partially painted green and red, and a number of ostrich eggs and Mecca stones are suspended from it by small chains. At the left of the niche is a large slab of white marble, with an ornament cut in and painted red and yellow. In one corner is a round inscription in Kufic, signifying "There is no God but God, and Mohammed is His prophet." To the right of the niche is the mimbar or pulpit, consisting of a flight of twelve steps running up to a square top: the sides and balustrade are divided into small panels of carved olive, each of a different design of great richness and beauty. In the nave are four chandeliers, and in the centre of each alternate aisle is a smaller one. These chandeliers are of bronze, of very simple construction, and made to support myriads of small oil-lamps. They are small, round-bottomed glasses, half-filled with olive-oil and water, and have a wick floating on the surface, and give a fine, mellow light. The columns are of all varieties of marble, cipollino predominating. There are two fine large ones of porphyry under the dome at the east end of the nave. Some are of verde-antique, and there are also columns of gray, rose, and black granite. The capitals are of great variety, mostly of Roman origin; some are Byzantine, Norman, and square ones with the cross of Malta that has been almost obliterated by the chisel. Capitals having ornaments of birds' heads and animals have in all cases been religiously mutilated, leaving only pieces of wings, feet and bodies to indicate what they were originally. There are seldom two capitals of the same kind, and it is rare to find a capital that belongs to the column it stands on, being often too large or too small. In many cases the top of the capitals are covered with three or four inch boards, on which to build the masonry, and the massive walls of the building keep the structure from falling. The floor is entirely covered with straw matting; also the side walls and the columns to the height of four feet. The frequent whitewashing has in many cases so heavily covered the capitals and pieces of ornament that it has almost obliterated all traces of sculpture; often the columns are half covered with whitewash. In the dome at the east end are a few small stained-glass windows; also three at each end of the prayer-room. When the mosque is closed, the little light entering gives a mystic religious feeling; but the doors are thrown open during prayer hours.

The court is a large enclosure, larger at the east than at the west end, almost surrounded by a roofed arcade broken only in the west corners by a store-room and a room for ablutions, and in the centre by the minaret. The court contains 264 columns and has two galleries running around three sides, but only one at the west end. Facing the court the columns are double, but in the galleries they are simple. The eastern façade on the court is the finest piece of architecture the building contains, and is of range masonry and cipollino columns. The columns diminish in size toward the minaret, and some of them are broken. There are Kufic and Arab inscriptions cut on some of the columns, mostly quotations from the Koran.

The minaret has a heavy base thirty feet square, tapering to double that height, built of stone. On this stands a hollow cube having around it a space of three feet, outside of which is a crenellated parapet four feet high. This cube has an arch on each side in which are set four columns each. At one corner outside is a small closet to contain the white and red flags. On this cube stands another of precisely the same description having the same space and parapet around and similar arches. On this is a small dome surmounted by the crescent. On the parapet the Inman stands and calls the Faithful to prayer at regular hours. The door of the minaret is encased by three pieces of frieze from Roman ruins, and to the left of it are two blocks of marble with Roman inscriptions thereon partially obliterated. A flight of 120 steps leads up to the top, up a square winding staircase with six steps at each turn, lit by a few windows and loop-holes. The court is paved in part with irregular pieces of marble, and the rest with regular paving stones, the whole sloping toward the centre where is placed a large piece of ornamented marble pierced by two holes; to the right and left toward the prayer-room are two other holes: these holes are to conduct the water to a series of underground cisterns which contain the water of winter rains for use in summer. The mouths of the cisterns are made of the bases of large columns through which a large hole is pierced: these are deeply grooved on the inside by the friction of the cords used in drawing water. The mouths are six in number. There is another cistern outside the west wall to contain the surplus water; there is also a well in the north-west corner which serves the room for ablutions. Near the centre of the court is a sun-dial with numerous points to tell the hour at any season. It stands horizontally on a cube of masonry four feet square, and is composed of four iron points in a plate of marble: there are also two others above the arcades of the east and north sides. The pavement of the north and

south galleries is raised two feet above the rest. The entrances of the court are all of the same construction. A horse-shoe arch opens on a square vestibule roofed with a small dome, and from this vestibule a large bolted wooden door opens into the court. The one entering the prayer-room from the south is of the same construction, but larger, having an outer lattice-work gate and inner double doors; this is the usual entrance to the mosque and the floor is covered with straw matting. The northern entrance to the prayer-room is the largest and finest of the entrances. It consists of a square vestibule with arches opening on three sides, containing very delicate arabesques in stucco, which are the worse for repeated whitewashing; under each arch are four marble columns. From this vestibule large double doors enter the prayer-room, above which is a slab of marble set in the wall, containing an inscription. This vestibule has a fluted dome and crenellated parapet, under which are arches cut in bas-relief in the stone. To the left of this entrance is a small zouia or sanctuary of a holy woman, built against the wall of the mosque. It consists of a small room with small dome, a door, and a window with wooden grating. It contains numerous Mecca stones which are hung from the ceiling by chains. These stones are conical in shape, two inches long by one in diameter at the base, covered with wax on which ornamental straw-work is stuck; a small leather thong is attached to the small end, and they are generally hung in clumps of five or six. The richness of the mosque consists principally in its columns, which probably represent the best part of the spoils from the Roman ruins of the Regency. The best part of the Arab work on it is the woodwork, which is original and well executed. The mosque inside and out is whitewashed, with exception of the base of the minaret and the façade facing it.

Charles X. Harris.

THE $3,000-HOUSE COMPETITION — I.

Skeleton Specification.

EXCAVATE for cellar and trenches, and deposit material where directed on the lot.

All grading to be done by the owner. Trenches to be sunk one foot below cellar bottom.

Cellar to finish 7′ 0″ high to under side of floor joists, and cellar bottom to be graded with sand and laid in cement.

Foundations: — Foundation walls to be of good local stone 20″ thick, laid in mortar.

Cellar to have bulk-head entrance and chestnut posts for supports, resting on flat stones.

Make foundations for chimneys of good flat stones.

Cellar wall to be pointed.

Drain-Pipes:—Provide and lay 6″ drain-pipes from cellar wall, 30′ in length.

City Water:— Provide and lay pipes for city water 30 feet in length.

Brickwork: — Bricks for jambs to be good common bricks from some of the kilns near Boston. Bricks to be hard-burned, but need not be selected as to color. Outside walls to be 8″ thick, built of old hard-burned "bench" brick with round boulders built in occasionally, all laid in ½ cement mortar.

Chimneys: — Build and top out chimneys with common rough brick. All joints to be filled and thoroughly plastered outside and in.

Build into the bottom of each chimney a cast-iron door.

Provide and build into chimneys 8 sheet-iron thimbles where directed.

Fireplaces: — Build two fireplaces with pressed-brick sides, hearths, and back; tile facings to cost $10 for each fireplace.

Clothes-Boiler: — Provide and set in brick a copper boiler in laundry.

Lathing and Plaster: — All walls, ceilings and partitions in first and second stories and servant's room in attic to be lathed with good spruce laths and covered with mortar and finished with a skim coat.

Outside walls to have plaster carried down to floor.

All plaster to be of best materials and rendered true, hard and smooth.

Framing: — Building to be framed with good sound spruce of the following sizes: First floor, sills 6″ x 8″; girders, 7″ x 9″; joists, 2″ x 9″, 16″ on centres. Second floor, sill on brick wall 6″ x 8″; girt 1″ x 6″, nailed to studding; joists, 2″ x 9″, 16″ on centres. Third floor, joists 2″ x 7″, 16″ on centres, and collar 1″ x 6″ for ceiling of attic.

Studding for outside to be set 16″ on centres. Posts, 4″ x 8″; studding, 2″ x 4″; plate, 4″ x 4″.

Floors: — All floors to be bridged between bearings, and to have a lining floor of ⅞″ spruce, and all floors except Kitchen and Dining-room to be laid with ⅞″ spruce floor boards of narrow widths.

Kitchen and Dining-room to be laid with rift-grain southern hard-pine not over 4″ wide.

Veranda floors to be laid with southern hard-pine 4″ wide, 1⅛″ thick, with space between each board.

Exterior Enclosing: — All walls not of brick to be boarded with spruce boards planed to a thickness, and covered, as shown, with best cedar shingles, part to be cut in patterns as indicated.

All outside finish to be as per details of good seasoned pine, free from sap.

Building to be covered with sheathing-paper between boarding and shingles. Mitre borders around all hearths, registers and other openings.

Provide and fix hard-pine thresholds to all doors.

Balcony floor to have pine slats, laid over tin.

Roof: — Roof to have 2″ x 6″ rafters, 16″ on centres, and boarded with ⅞″ spruce boards planed to a thickness and covered with best quality sawed cedar shingles, laid 4″ to the weather. Build gutters in roofs and connect them by 2½″ galvanized-iron conductors with drain-pipe in cellar.

Tinning and Flashing: — Balcony floor to be covered with tin. Valleys to be laid close and to have pieces of zinc laid with each course of shingles.

Chimneys where joining roof to be properly flashed with lead and zinc.

Partitions, Furring, etc.: — Partitions to be made of 2″ x 4″ studding set 16″ on centres and well braced. Studs of openings to be double. Truss over all openings.

Outside brick walls to be furred with 2″ x 3″ studding 12″ on centres. All ceilings to be furred with 1″ x 2½″ strips, 16″ on centres.

Doors: — Doors to have plank frames of pine. Outer doors to be of white-pine 1¾″ thick as per details. Hardware to cost $6.00 for each door.

All inside doors to be as per details of pine 1¾″ thick. Hardware of the value of $1.50 for each door.

Windows: — Windows to be double sliding-sash 1¾″ thick, in box frames, as per details, hung with best weights and cord. Hard-pine pulley-stiles, parting-beads and stops. Stops to be put on with brass screws.

Glass to be of 1st quality German of sizes figured on drawings.

Allow $25.00 for colored glass for windows on stair-landing.

Cellar windows to have 1½″ sash, in plank frames.

Inside Finish: — All inside finish to be of white-pine as per details, that for Hall, Dining-room and Parlor to be suitable to finish in the wood, the remainder to be as good as 2d quality Michigan.

Hall and Dining-room to have chair-rail as per detail.

Hall, Dining-room and Parlor to have wood cornice and picture-moulding as per details.

Kitchen to be sheathed up three feet with pine sheathing of narrow widths with moulded cap at top.

All small doors to be fitted up with cupboard catches and all drawers to have proper pulls.

Pantry and china-closet to be fitted up with wide shelves and 4 narrow ones in each, also a set of three drawers in each.

Build coal-bins in cellar with 2″ x 3″ studding and ⅞″ spruce boards, all to be planed.

Build wooden mantels in two rooms to cost $20.00 each, and plain shelves in bedrooms to cost $3.00 each.

Stairs: — Build stairs as shown with spruce plank stringers, treads 1⅛″, risers ⅞″, and ⅞″ finish stringer, all of pine; rail, newel-posts and balusters all of cherry as per details.

Stairs to attic and cellar to have ⅞ treads and risers of pine and plain guard-rail of pine.

Build bulkhead steps of chestnut-plank, and steps to entrances of pine.

Painter's Work: — All outside wood finish to have three good coats of best lead and oil, of such tints as directed.

All inside pine finish except Hall, Dining-room, and Parlor to have one coat of shellac and two coats of paint. Rooms not painted to have two coats of shellac and one coat of varnish.

Hard-wood of stairs to be well filled with stuffing and oil, and two coats of shellac well rubbed down in oil.

All tin to have two good coats of metallic paint.

All roofs to have two coats of red paint.

Gas-Fitting: — Do all gas-piping to conform to the regulations of the local gas-company. Fixtures to be put in by the owner. Fix gong-bell on front door.

Plumbing: — Provide and fit up in Bath-room a 14-oz. planished copper bath-tub with all proper fittings, nickel-plated.

Fit up a 14″ Wedgwood bowl, and one of Helyer's water-closets, all with proper fittings, etc.; 4″ soil-pipe running to drain outside of cellar wall and carried up through roof with ventilator at top, and all to be properly trapped.

Wash-bowl to have marble top and back.

Fit up in kitchen a 36″ iron sink with compression-bibs for hot and cold water. Sink to be sheathed up underneath, and fitted with cleat doors.

Waste-pipe to sink to be trapped.

Provide and fit up in kitchen a 40-gallon copper boiler with all proper connections.

Provide copper wash-boiler for mason to set in laundry with soap-stone slab, and cast-iron door and frame, with compression-bibs for hot and cold water.

ESTIMATES OF QUANTITIES AND PRICES RULING IN THE SUBURBS OF BOSTON.

100 square yards cement floor	$ .50	$50.00
190 cubic yds. excavation.	.25	47.50
50 perch of stone for foundation	2.25	112.50
14 perch of stone for underpinning	2.50	35.56
5,000 bricks for outside walls, laid	18.00	90.00
600 bricks for jambs, etc.	20.00	12.00
2,600 bricks for chimneys	20.00	52.00
400 face-bricks for fireplaces	30.00	12.00
8,300 ft. rough lumber	17.00	141.10
3,000 ft. outside boarding	17.00	51.00
2,800 feet floor-lining of spruce	17.00	47.60
2,100 ft. spruce floor boards.	25.00	42.50
450 ft. hard-pine floor boards	40.00	18.00
650 square yards lathing and plaster	.25	162.50
19 inside doors and one double door	2.50	55.50
2 outside doors	4.50	9.00
2 cellar doors	1.50	3.00
34 window frames, sash, etc.	4.00	136.00
32 M. shingles	4.25	136.00
Outside finish mouldings, etc.		50.00
Stairs		130.00
300 ft. pine sheathing for kitchen and laundry		$10.50
Fittings for pantry and china-closet		30.00
Fittings for other closets		15.00
Hardware for doors and windows		50.00
Nails		25.00
Plumbing		200.00
Painting		150.00
Three mantels	20.00	60.00
Four shelves	3.00	12.00
Inside finish, casings, base, etc.		200.00
Colored glass		25.00
Gas-piping and fixtures		50.00
Tiles and brasses for three fireplaces		40.00
Setting wash-boiler		8.00
Coal-bins		10.00
30 ft. drain-pipe	.30	9.00
150 ft. galvanized iron conductors and pipe.	.20	30.00
Carpenters' labor		500.00
Allowances for waste, etc.		150.00
Builders' profit	10%	275.00
Architect's commission		200.00
Total		$3,343.20

Furnace put in by owner.

These prices were obtained from a reliable builder of Boston.

Submitted by "Danfors."

THE ARCHITECT'S GHOST.

A ROMAN TOMB
Square in Plan.

THE *cause célèbre* which has occupied one of the courts of law for so many weeks past, and which has aroused almost still more interest in the world of artists and connoisseurs, can scarcely have failed to awaken here and there behind the scenes of the architectural profession a peculiar kind of uneasy feeling, if no more. Is there or is there not such a functionary as the Architect's "Ghost?"

The account which has been given of the manners and customs of the Sculptor's Ghost is not only amusing, but dramatic. You ring the door-bell. A hatchway opens in the studio floor. A listening ear is strained. You send in your card. A silent shadow glides downwards through the floor. It disappears, and the flap closes over its head. You are admitted. You find the great artist absorbed in his great work, his spirit in the empyrean. You have to pull him by the sleeve before his thoughts return to the level of the earth and of you. But he is glad to see you, nevertheless, and glad to think that you are gladdened by the inspection of his great work. After a few happy moments you take your leave, and the silence of ineffable repose settles like a pall upon the chamber of imagery. The trap is raised again. The ghost re-ascends. The task which you have interrupted is resumed. Roman augurs winked to each other across the altars of the gods; but there is no winking here. When Socrates and his demon walked alone together, and worked out the secrets of wisdom, this was at least more akin to the transcendental brotherhood of the studio. The fashionable sculptor and the provider of "artistic assistance" work out in secret the mysteries of English statuary, and why should the world be any the wiser?

Whether there may be a great deal of truth in this, or none at all, we do not at present care to inquire; the case is one of those which in a "commercial country" may be left to the judgment of commercial men. That is to say, when a product of even the highest art is, as a work of sculpture must always be, to the purchaser an article of trade value, it is useless for purists to pretend to shut their eyes to the fact that an occasional producer, if in any way conscious of his own deficiencies — and who is without them — may easily persuade himself to supplement his own art by that of some artist "to the trade." The question, then, which we now propose for consideration is how far anything of this kind prevails in the practice of architectural design, and to what good end or ill.

Now we need not boggle at the admission that certain classes of architectural practitioners in a large way of business (this is the appropriate phrase, however vulgar some may think it) have done their designing wholly by other hands. Neither need we hesitate to declare that we do not wholly approve of this. The architect's ghost, in the eye of many a true critic, exists only to be denounced; like Artemus Ward's Indian, he is "pison wherever found." And we are glad to think that this view of the case is coming to be more cordially accepted amongst architects every day. In other words, the principle is being more and more widely and firmly accepted that the professed architect who does his designing by another hand, not because he has no time at command, but because he has no ability, is scarcely a true man.

There are "firms," for example, who "do" architecture as they "do" rent-collecting, valuations for probate, surveys of dilapidations, compensation claims, sales by auction, and (the connecting link) the laying out of land for building. The customers of such extremely commercial "houses" are not, however, deceived in architectural matters, as the wicked say the fashionable sculptor is capable of deceiving fine ladies and gentlemen. The fact is generally pretty plainly stated that "we keep a gentleman who attends to our architectural department," and so the matter ends. There are builders also who "keep their architect," but neither in this case is he a ghost so much as a sort of substantial artisan carrying off three or four sovereigns loose in his waistcoat-pocket every Saturday at noon, and holding office subject to a week's notice on either side. The real architect's ghost is quite another kind of man. Moreover, there are two classes of architects' ghosts, the indoor and the outdoor.

Now when an architectural practitioner is falling into the sere and yellow leaf, and is no longer physically able to work all night, or even after dinner, at the drawing-board, or when, although in middle life, he is so much occupied with the business of administration that he perhaps cannot sit down to the drawing-board at all, no man of common-sense would grudge him the help which is to be obtained at the hands of an assistant of high class, who understands his manner, can interpret his hasty sketches, and has learned to identify himself with his spirit. To such a lieutenant the ablest master may be permitted to hand his memoranda and dimensions, and his rough idea, as it is called, of how to treat the subject; and although the subordinate may not be able to do all that the master might, yet it may be felt that necessity has no law in such circumstances, and that it would be but an affectation to speak of the design as the work not of the one but of the other. Cases can even be imagined in which not a single line of the roughest of rough sketches has been done with the master's own pencil, and yet the product shall be his own as honestly as if he had worked out every part of it. The test is simply this: whether he could have done it as well for himself had circumstances permitted, and the probability is that he could have done it better, and a great deal better. Indeed in architectural work this state of things may be recognized more readily than in almost any other kind of artistic work whatever; for the drawing is not in fact the design. Moreover, the design, if it be truly architectural — that is to say, constructionally rather than only superficially artistic — has in a great measure to work out itself rather than to be worked out, growing like the tree, from germ to sapling, from sapling to branch, and from branch to flower, by a natural gradation and development, in which, just as it alone works, the first inspiration contains within it the essence of all.

But the architect who employs the aid of a ghost is, as we have already hinted, the very respectable, tradesmanlike gentleman who cannot do the design himself because he never knew how, and whose time is fully occupied by choice in what is called "getting the business." He is a sort of agent or traveller for architectural work, and so far, indeed, he is the right man in the right place; for all the fault we find in him is that he does not confine his pretensions within this very useful limit of fact, but considers it necessary to profess to do that also which he knows is beyond his power.

The ghost in such a case is, as we have observed, of one of two classes. Either a high-class assistant lies *perdu* in the office, in a position which is certainly humiliating, or a designer "to the trade" is employed, whose manner is strictly his own, and whose work in many instances can be as clearly read by those who are behind the scenes as if they had seen him do it. Now both of these modes of proceeding, we are glad to acknowledge, are falling more and more into desuetude every day, and therefore, far from experiencing any desire to exaggerate the evil, we will now take leave to offer what may almost be an excuse for a practice which need no longer awaken the apprehension of those who wish well to the art.

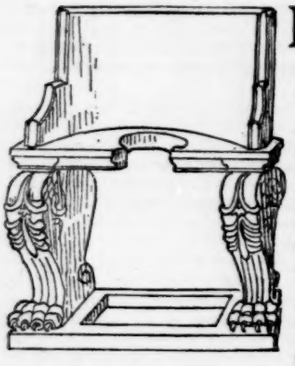
For after all, as everybody knows, what the English public want from an architect is primarily the skilful and financially successful administration of their building business in one way after another, and only very secondarily indeed the introduction of the delicate finesse of artistic design. The profession of architects, consequently, as constituted by those external influences which are necessarily the strongest, is held to consist of little else than expert building agents. In nine cases out of ten, therefore, the clients do not care a button what means are adopted *to put the polish on the plan*, as they may be supposed to say; and as for being fastidious on the point of personal authenticity and individuality, the idea cannot be got into their heads at all; as even the late Mr. Street came to know to his cost, when a churchwarden roundly told him one day that he understood a certain restoration was to be done, *not* for the sake of the architect's individuality, but for something much more intelligible.

We are not by any means afraid, therefore, of the architect's ghost. We can never cease to sympathize with that most estimable class of our highly educated younger men who are obliged to remain in the position of assistants year after year when they have long been perfectly qualified to do business for themselves, and we do not hesitate to plead their cause when they ask for more direct recognition

than they receive; but their case is one of the inevitable grievances of all business, and cannot well be helped. Nor do we fail to see the important use occasionally of the "architect to the trade," and certainly we cannot help respecting his abilities. As time wears on matters will, we hope, get better in many ways besides these, and the wise will wait.

A word more to those who are both wise and young. To get into good practice as an architect is, if the truth may be told so plainly, not so much a matter of skill in art as of aptitude for, as the bagmen say, "securing orders." It is easy enough to do the work; the difficulty is, how to get it to do. Look this fairly in the face, and many things are explained and many offenders exonerated. We must take the world as we find it. — *The Architect.*

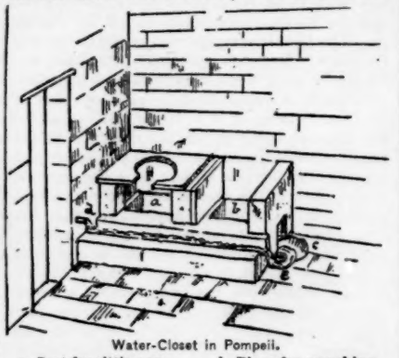
WATER CLOSETS. — III.



F. LIGER,[1] in his work on this subject, informs us that the remains of three privies were found in the ruins of Acteon's house, Pompeii.

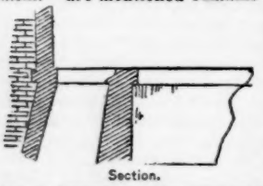
One was situated against the wall on the alley, another under the steps, and the third was in the kitchen. The first was the only one that received light from the outside. Remains of privies (*latrines*) are still found in Lucretius's house, placed in a narrow closet.

A drawing by Piranesi represents a water-closet (*sterquilinium*) from the same town. There are three compartments placed in a large chamber, one of which has a seat; the other seems intended for use after the manner of Orientals (by squatting), while the third was evidently used as a urinal. The water is admitted by a pipe which runs through the wall: thence it flows in front of the seats through a gutter, falling into the urinal from a higher level, where it turns and runs under the closet seats, carrying away fæcal and other excrementitious matter. This was probably a cleanly arrangement, when we take into consideration the fact that the Romans cleaned off all sediment or other particles which adhered to the surface with a sponge or mop fixed on the end of a stick.[2] In the work entitled "*Le Case et i Monumenti*" are mentioned remains of privies which were found in the house of Marco Lucretio. In these rooms remains or indications of tiling were found, and obscene figures pointedly drawn. Cochin and Belicard, in "*Les Antiquités d' Herculaneum,*" mention and illustrate several seats with holes which were found in the palace of Serapis (1750), Puozzoli. Public latrines among the Romans had no seats, they being in the habit of crouching, after the manner of Orientals. In private houses marble seats were usually used; but in some cases the choice of arrangements was given them, both kinds, with and without seats being placed in the same room. In Constantine's time (300 A. D.) and probably at an earlier date, seats in the shape of chairs, with backs and arms and elaborately carved legs and feet, were used for this purpose. A fine example was in the Louvre some years ago, which is supposed to have dated back to Constantine's reign.



Water-Closet in Pompeii.

a. Seat for sitting on. *b.* Place for crouching. *c.* Urinal. *d.* Water-pipe. *e.* Stream running in urinal.



Section.

Plan.

Privy from Palace of Serapis, Puozzoli.

GLENN BROWN.

[1] "*Fosses d'aisance Latrines Urinoirs et Vidanges.*" F. Liger, Architect.

[2] Major's *Pompeia*, Pl. XXXV.

[*Inscription found on a wall in a privy in Pompeii.*]

Quaeras censeo, si leges laboras
Nigri Tornicis etrium poetam
Qui carbone rudi patrique crjta
Scribit carmina quae legunt cacantes.

THE ILLUSTRATIONS.

DESIGN FOR A $3,000-HOUSE, SUBMITTED IN COMPETITION BY "*Danfors.*"

OWING to the number of designs submitted and the consequent great labor of the jury in comparing them and examining the specifications and estimates, it will probably be some weeks before we are enabled to announce the result of this interesting competition. Meanwhile we shall continue the publication of the most worthy designs, — such action on our part being wholly independent of the jury and in no way prejudicing their conclusions, — so that the award and criticism, when they do come, will be more readily appreciated by our readers. As the number of designs offered is greater than usual, the number we shall publish will be correspondingly larger.

THE GRAND MOSQUE AT KERWAN, TUNIS, AFRICA, SKETCHED BY MR. C. X. HARRIS.

For description, see the article on Kerwan elsewhere in this paper.

SUNDRY WORKING-DRAWINGS.[1] — III.

I NOW propose to lead you right across England to the opposite coast of Wales, where it has fallen to my lot to carry out some of the most important works that have been entrusted to me. My first introduction to that neighborhood was in the year 1863, during which I received a commission from Mr. Thomas Savin, of Oswestry, to whom the principality of Wales owes a great part of its railway accommodation. That gentleman asked me to make a survey at Towyn, in North Wales, where he contemplated laying out for building all the land lying between two of the stations of his coast line. When that was finished he desired me to proceed to Aberystwith by a morning train, so as to be able to advise him in the evening of the same day as to some additions he proposed should be made to the building in that town known as Castle House, in order to convert it into an hotel. This was, as I found it, a large and complicated collection of buildings, of which the nucleus was a triangular structure with an octagonal tower at each corner. This central portion had been built by Nash, to whom London owes Regent Street. Having taken a rapid survey, I made a sketch design for a wing to be built southward of the above-named structure, along a narrow strip of land lying between the road and the cliff. This was intended to contain a large saloon, to serve as a dining-room, about one hundred feet long, having eight bay-windows overlooking the sea, and at the farther end of this was another octagonal tower. Mr. Savin approved this design at once, and desired me to lay out the foundations of it on the following morning, ordering some thirty men to be on the spot to receive my orders. This I accordingly did, after which I proceeded to town to complete and send down the requisite drawings. In order to provide as many bedrooms over this saloon as possible, without interfering with its area by any supports except those afforded by its external walls, I projected the outer face of the first floor to the front of the bay-windows by means of arches spanning from one bay to another, and constructed the partitions with queen-truss framing, which permitted of openings in the middle of the transverse ones for a central corridor. The longitudinal ones again rested upon these latter, and were framed likewise with openings for doorways in the middle of each of the rooms so divided off. These trussed partitions provided also the strength requisite for a flat roof over the whole, proposed to be covered with asphalte upon concrete, and to serve as a belvedere, whence any number of visitors congregated on it might enjoy the extensive coast and sea views obtainable from it.

This flat was approached by three circular staircases within turrets, from the saloon and bedroom floor and waiters' rooms. Since the conversion of the building into a college this space has been enclosed, and provides a large recreation apartment for its students.

My employer, acting as his own builder, decided to my regret to execute this wing in brickwork, to be covered with cement. This being the case, I designed the upper portion in timber-framed construction, with brick panels to be cemented and ornamented with incised work and colored so as to produce effect.

During the progress of this southern wing I one day received a

[1] Paper read at the meeting of the Architectural Association, November 24, 1882. By J. P. Seddon.

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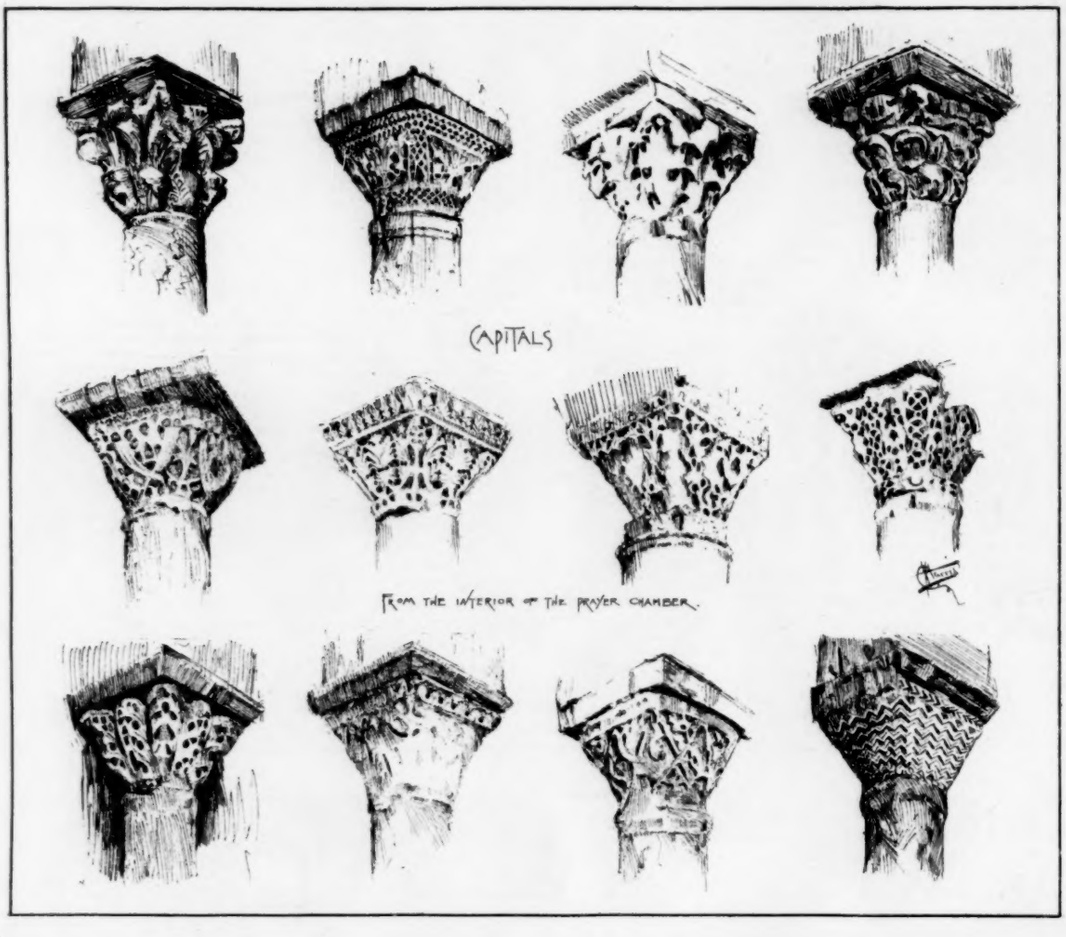
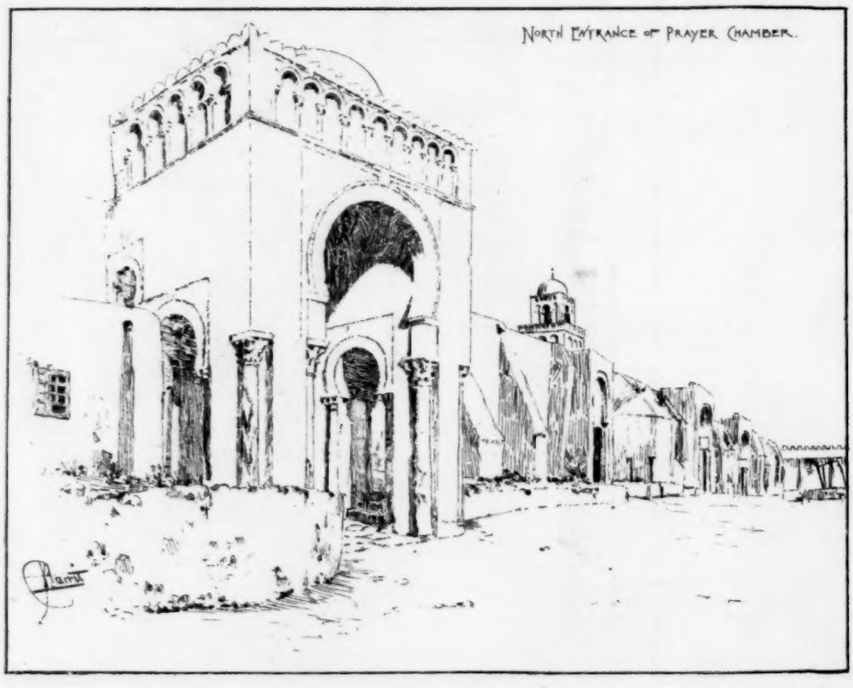


CAPITALS

FROM THE INTERIOR OF THE PRAYER CHAMBER.

PRAYER CHAMB

GRAND



NORTH ENTRANCE OF PRAYER CHAMBER.

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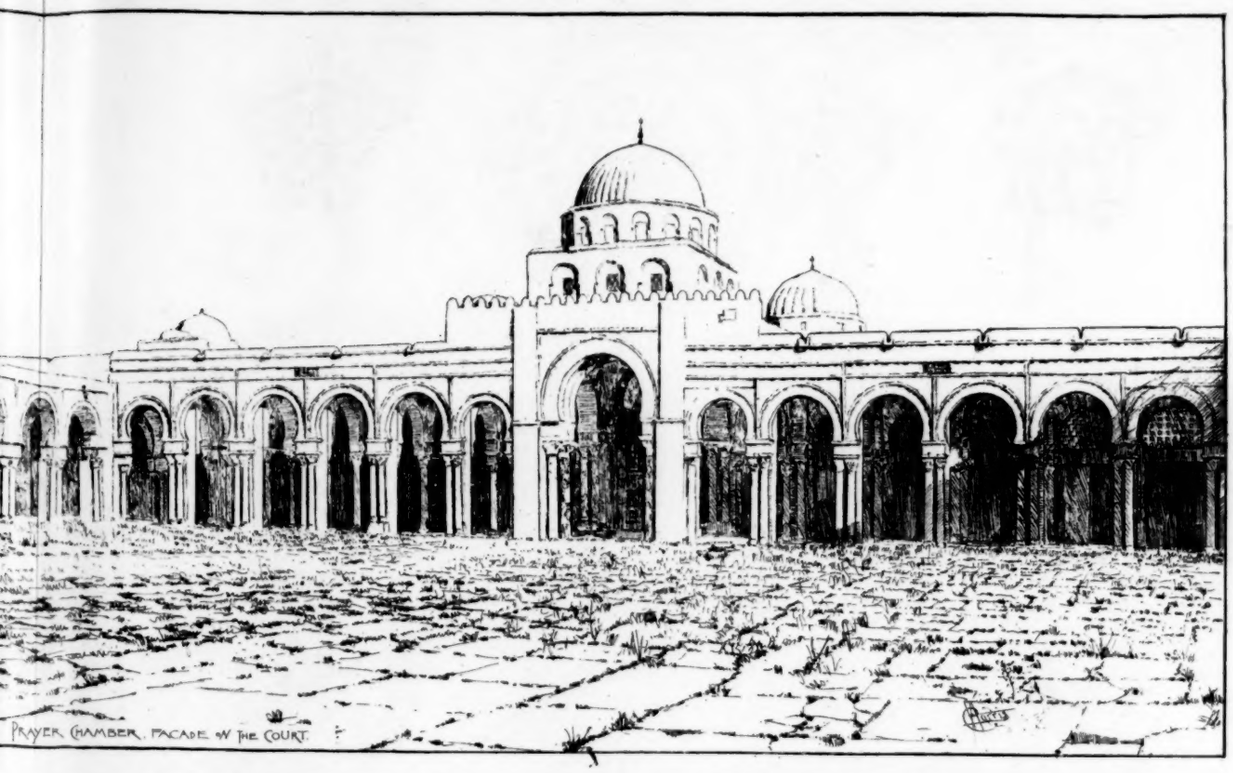
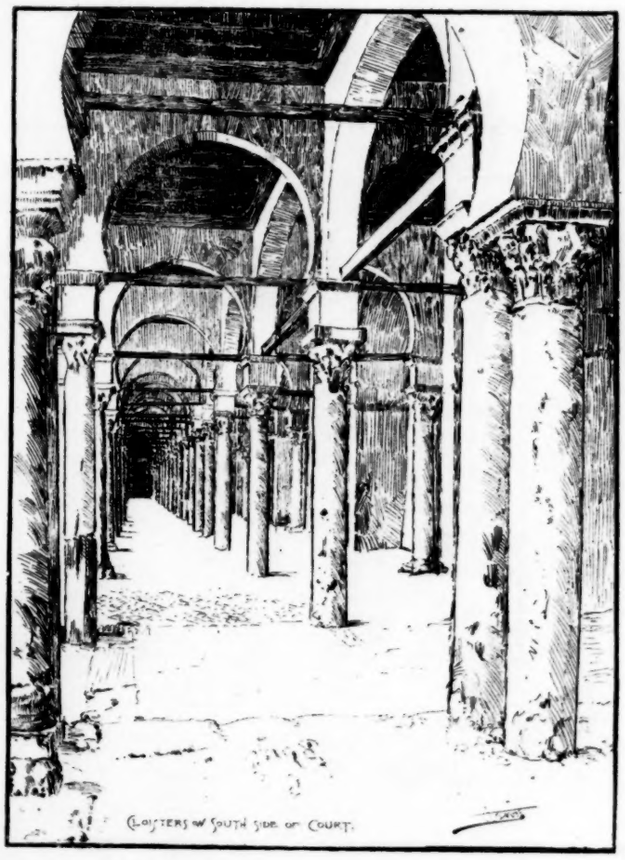


PRAYER CHAMBER, FACADE ON THE COURT.

GRAND MOSQUE AT KERWAN TUNIS, AFRICA.

THE MINARET, FROM THE COURT.



CLOISTERS ON SOUTH SIDE OF COURT.

Heliotype Printing Co. 211 Tremont St. Boston.

No. 569 AMERICAN ARCHITECT AND BUILDING NEWS. JAN. 20, 1883

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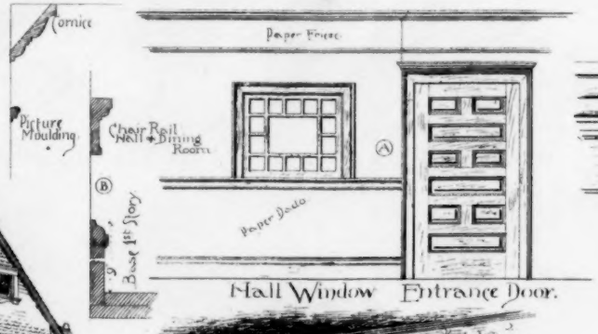
American Architect Competition

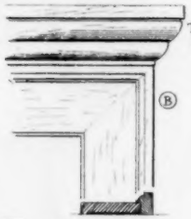
A Cheap Dwelling

By Danfors.

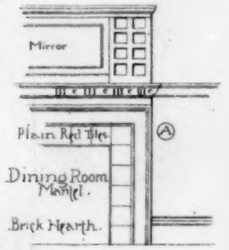
North West View.

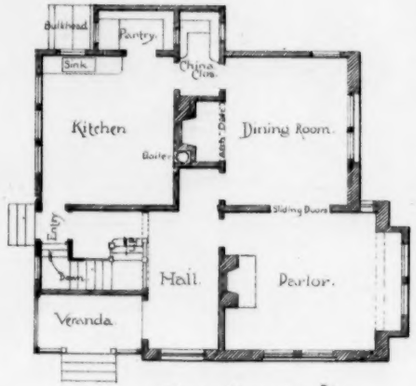


View showing Stairs.



South West View.



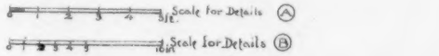


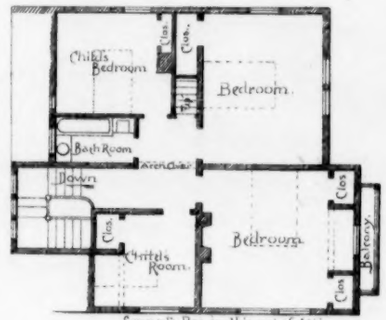
First Story Plan.

Scale for Plans. 5 10 15 20 Ft.

Dining Room ... ecess.

East Elevation





Servants Rm. in this end of Attic

Second Story Plan.

Heliotype Printing Co. 211 Tremont St. Boston.

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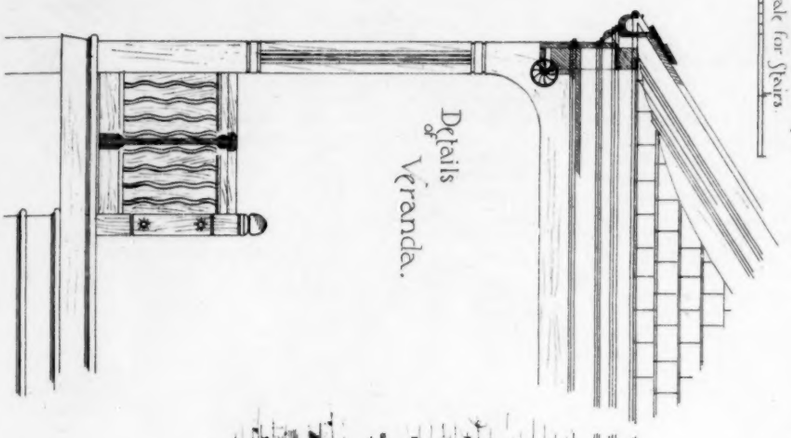
By Danlors.

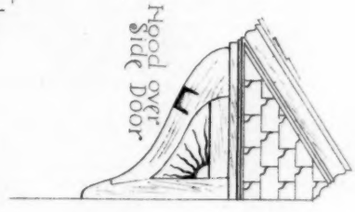
Details of Finish for A Cheap Dwelling

Scale for Outside Finish 1 inch = 1 foot

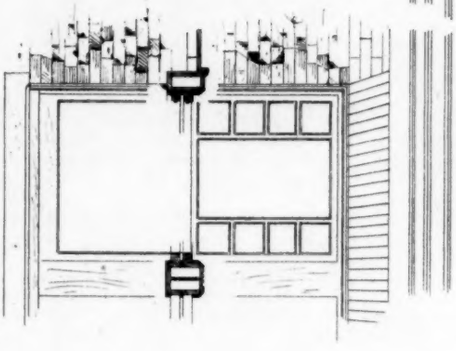
Scale for Stairs



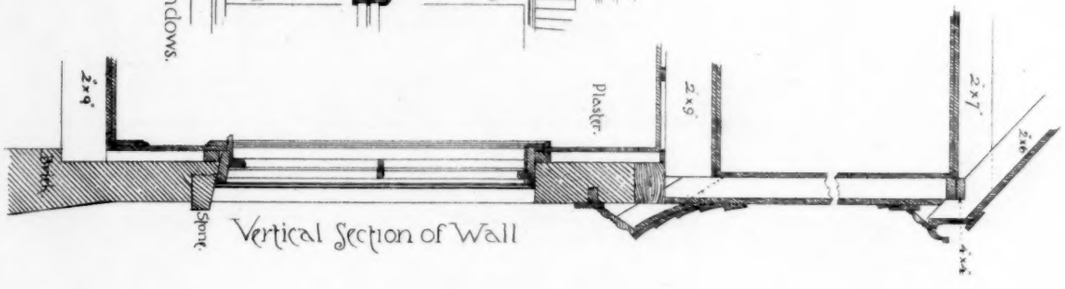
Details of Veranda.



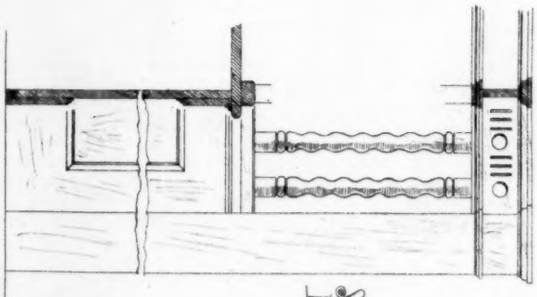
Hood over Side Door



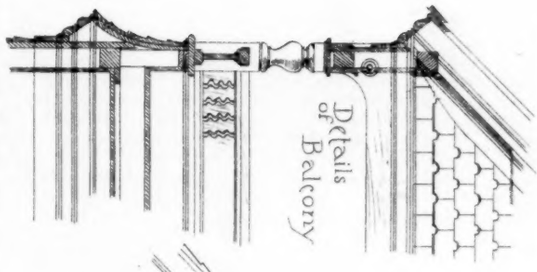
First Story Windows.



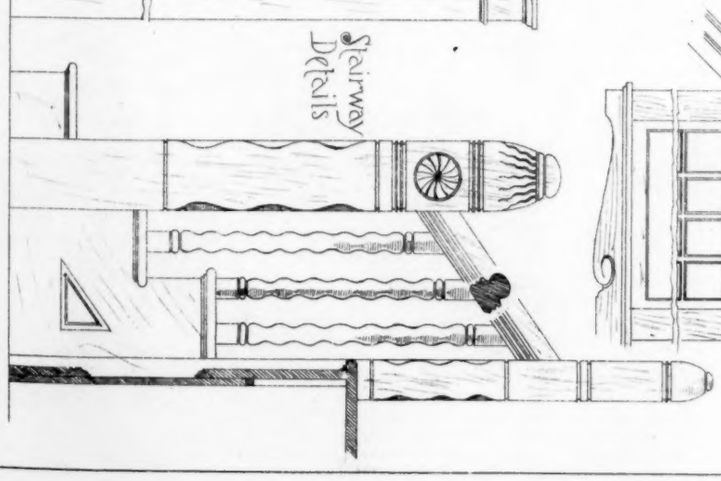
Vertical Section of Wall



Stairway Details



Details of Balcony



Details of Upper Part of Gable

Heliotype Printing Co. 211 Tremont St. Boston.

summons by telegram from Mr. Savin to go down to consult with him in the evening about the construction of another wing northward of Mr. Nash's building. I was again allowed no time for the preparation of working-drawings, but was instructed to proceed then and there to carry out my approved sketch, 500 men being told off to execute the work, the whole of whom I had to keep well employed. This time, however, I was permitted to have my own way as to material, and I consequently selected Bath stone for the dressings, relieved by blue Pennant stone from Hanam, near Bristol, for the columns, and a local cinnamon-colored stone from a quarry belonging to Mr. Savin for the wall-work. The principal entrance was arranged in the centre of the building at the back, where, there not being space sufficient for any porch of an ordinary rectangular form, I designed the triangular one, which was erected, and gave every facility required. Adjoining the entrance lobby on one side was the principal staircase within the tower, the plan of which is trefoil-shaped, next the street. On the side is a special staircase to what was intended as the billiard-room and its appurtenances. The billiard-room is of an oval form, and capable of holding three tables with bays on either side for spectators. Underneath this apartment, on the ground floor, is one which was intended as the bar, and whence the approaches to nearly all parts of the building could be commanded. The intermediate floor was required to be of great strength, so as to obviate all danger of vibration to the billiard-tables; to accomplish this purpose, being indisposed to use girders, I designed a special system of flooring, in which although the span is twenty-five feet, no piece of timber deeper than nine inches was used. The joists, nine by three, were strengthened by struts underneath, disposed in such a manner as to carry a cradling for boarding ceilings, with moulded ribs, which were, in fact, shallow vaultings in wood-work, and possessed of very great bearing power. This same method of flooring I afterwards used for several of the other large rooms in this building, as well as in a mansion at Abermaide, near Aberystwith.

For the large saloon, about eighty feet long, intended as a drawing-room, and a smaller adjoining one in this north wing, I adopted trefoiled shapes for the plans of the bays next the sea, and utilized an irregular piece of ground on one side of the former for a series of vaulted recesses, separated from the room by a stone arcade with marble columns, and at the end of the room is a segmental apse with a range of traceried circular windows in stone, to be filled with ornamental glass.

At the mansion of Abermaide, which I built shortly after this college, I adopted generally the same character of detail, and in particular I may call attention to the entrance porch, the lintels of which, of considerable span, are of Doulting stone carried on columns, the shafts of which are of polished Shap granite.

Very recently, I was requested by the directors of the North and South Wales Bank to erect for them a bank at Birkenhead, in which I was specially requested to use the same general style and character of detail as that I had employed on this college and at Aberystwith, and it was carried out accordingly.

Somewhat similar also, but with round instead of pointed arches, is the addition that I made about the same period to the mansion of Barrells Park, near Henley-in-Arden, in Warwickshire, the seat of Mr. T. H. G. Newton. This erection consists of a winter-garden conservatory; filling up a court between two wings of the mansion. Its enclosing screen-walls are built of Camden freestone, which has a deep yellow tint, and the supporting columns of the roofing, which is of timber and glass, and divided into square compartments, have shafts of Devonshire marbles, with richly-carved capitals. The whole of the flooring is of alternate dark bluish-gray and white marble squares within the moulded stone margins of the several flower-beds.

Before, however, leaving the neighborhood of Aberystwith, I may mention some particulars in connection with the restoration of the noble cruciform church of Llanbadern, which originally was a cathedral, and is situated about a mile from that town. This has been a work which has extended over a very considerable portion of my professional career. It has been carried out in successive portions, as the collection of the necessary funds has permitted. It commenced with the restoration of the nave and the rebuilding of the porch in the year 1868. The tower and transepts were restored in 1878, and the work to the chancel is now in progress.

The first portion was begun before the establishment of the Society for the Protection of Ancient Buildings, which at the second stage in the proceeding, though they did not honor me with any notice of their intention, sent a protest to the committee against the further prosecution of the work. Other antiquaries, however, of equal zeal and ability and greater courtesy, had at the very commencement interested themselves on behalf of the venerable fabric, in particular the Rev. Mr. Petit, to whom Llanbadern Church had always been dear, and who has given one of his characteristic sketches of it in his work entitled "Petit's Church Architecture."

That gentleman, anxious to learn what was proposed to be done to the structure, asked Mr. F. Penrose, the architect, to confer with me on the subject on his behalf. Recognizing at once the propriety of the feeling which had dictated this step and the courteous manner in which it was conducted, I addressed myself to furnish sufficient accurate particulars to enable a fair judgment to be formed. I directed measurements to be taken at distances of ten feet apart the whole length of the church, from lines plumbed from the base, and these showed the precise amount that the thrust of the decayed roofs had pushed the walls outward. This in fact was found to be not less than thirteen inches in a height of nineteen feet. The consequence was that Mr. Penrose intimated to me that it was obvious that the condition of the fabric was as dangerous as I had reported it to be, and that the work proposed was necessary.

I shall not weary you with any minute description of the state in which I found the church, and my working-drawings, which are to be reduced as illustrations to this paper in the journal of *The Architect*, will show what I have done to it. It will suffice to say that the walls forced out, as above described, and with perished mortar, were on the point of falling; the roofs had been much lowered, or else later debased ones had been substituted for the original: the ceiling came down below the points of the crux arches, and a huge timber cage was hung from the tower half-way down these arches to serve as a ringing stage, and the furniture of the church was rotten with the damp which the roofs had failed to exclude.

The special characteristics of this church are extreme simplicity in combination with the grandeur that results from largeness of scale, each arm and the tower being forty feet wide externally. The only place where any richness of architectural detail had been indulged in, was in the southern doorway, where the jambs were in three orders, shafted with rudely-carved capitals, and the arch was richly moulded, the details being of the characteristic Early English work of the district. All the original windows had been simple narrow lancets. These were rather curiously grouped in the west end of the nave and end of the south transept as triplets, one light, smaller than the others, being raised much higher. Those of the eastern end had been superseded, with an advantageous effect of concentrated light in that part, by a large Perpendicular window, with a smaller one of the same style on either side of the chancel. These, which are still dilapidated — the former having its mullions and tracery of wood, and the latter being blocked up with masonry — I propose to restore and reglaze. The original levels, or in some cases slopes, of the floors were sought for, and when ascertained were replaced. The floor of the nave was to slope upwards very considerably from the western end to the tower.

In the new roofs which I had to design, I adopted that character which my previous experience of Great Yarmouth had convinced me to be the best for such a span — thirty-two feet; that is, with principals and cradlings for the ceilings. The ceilings I have varied, increasing them in richness eastwards; and in that under the tower floor I have adopted wooden vaulting to support and make rigid the beams that existed before. In the same manner in the chancel, its ceiling is made to serve the same purpose for its old but rude oak roof, which it proved possible to retain. In my designs for the flooring or paving and furniture, which were all necessarily renewed, I have introduced an increasing amount of richness of detail eastward, with the view of enhancing by contrast the effect of the extreme simplicity of the architectural features of the stone structures of the church, which I have not ventured to alter in any way. I may call attention to the working-drawings of the pavement under the tower as being composed of the mosaic of Mr. Rush's manufacture, in combination with tiles executed by Mr. Godwin of Lugwardine from special designs of my own, representing subjects from the Apocalypse. In the chancel of Holmer Church near Hereford, and in some other places, I have also used this same series of tiles, but without mosaic.

The remaining drawings that I propose to lay before you on this occasion belong to works which are now in course of progress, or on the point of being commenced. Mr. Hugh Roumieu Gough is associated with me in regard to that of the important church of St. Paul's at Hammersmith, for which we are joint architects. In order to obtain the lofty proportions particularly desired by my colleague and the committee, it was necessary it should be dignified but simple and devoid of ornate detail, as the funds at our command were strictly limited. Such being the case, we have given great study to the question of the material, and have reason to think that we have been somewhat exceptionally fortunate in that respect. The stone for the exterior wall masonry is of red Mansfield, laid in horizontal courses, with the face-work hammer-dressed. This is being supplied from Mr. Robert Lindley's well-known quarries, at a price which competes favorably with that of the far colder and less pleasant-looking Kentish ragstone with which Londoners are, in our opinion, unfortunately too familiar. Then the stone for the facing of the walls internally is brown Ancaster, of a rich warm color, but beautifully varied. This is, we think, the first time that this has been used in the metropolis, although in mediæval times it was extensively used in the churches of Lincolnshire; and indeed the quarries, which also belong to Mr. Lindley, were worked by the Romans. As regards the stone-work for the dressings, we have been less fortunate; we had hoped to have had all the dressings executed in red Mansfield, but owing to the great cost of working, we have been compelled to content ourselves with Box ground stone for the exterior, and Corsham Down for the interior, the blue bed of which has been selected by us generally for the aisles, in order that they may harmonize with the marble of which I am about to speak. The whole of the columns and responds, with their bases and capitals, are of Belgian marble, known on the Continent as "Belgian granite," and much used in old Flemish churches as well as in those of parts of France. The quarries from which we are obtaining this material are situated at Soignies, near Brussels, and are so extensive as to be

practically inexhaustible. This marble can be obtained in blocks of almost any size, and the isolated columns in this church are of single stones, two feet two inches in diameter, and about ten feet long. Its appearance is very similar to our Purbeck marble, though for richness and beauty of color, in our opinion, this Belgian marble is superior. It has also the advantage of being exceedingly cheap, owing to the comparatively low rate of wages paid in Belgium. This is being used for the first time in England for this work. Mr. Gough, who has visited the quarries, will, I am sure, be happy to give you any information regarding this excellent material, with which, I may add, it is the intention to line the inside walls of the church up to the string-course below the sills of the aisle windows. The whole of this marble that I have mentioned, with the exception of the capitals and bases of the columns, will be polished.

Before passing on to the next set of designs, I would call attention to the construction of the roof as being novel in ecclesiastical architecture, and different from any of those I have previously described. Iron for structural purposes has been hitherto rather the friend of the engineer than of the architect; indeed, to the latter, and I must own to myself, it has been almost held as an enemy. We should not have used it from choice in this instance, but the necessity for economy and the desirability of avoiding all lateral thrust upon the lofty clerestory walls and any visible ties which would have to cross under the vaulted ceiling, led us to its adoption. Mr. Gough's engineering knowledge acquired many years ago whilst in the Government service, has, I think, well solved the difficulties of the problem, though in a different manner to that in which I have attempted to do so. Each of the latticed wrought-iron principals is, in fact, a girder, exerting no outward thrust whatever, except, of course, what may be due to wind-pressure, which is felt in every roof, no matter what its construction may be. In this respect, the report of Mr. Bidder, the engineer, so entirely confirms Mr. Gough's opinion as to disarm further criticism, since æsthetic considerations are, in this instance, outside the question. No portion of the iron-work of the roof will be left visible, as there will be a ceiling with groining ribs below it, which it is intended to treat with colored decorations.

In the work of building the new church of St. Andrew at Redruth, in the county of Cornwall, I am associated as joint architect with Mr. James Hicks of that town. I call your attention to the drawings of this structure as it has some special features, and *The Architect* journal has undertaken to reproduce the whole of them in an unusually complete manner, as illustrations to accompany this lecture in its pages. The plan is that of a very wide nave with exceedingly narrow aisles, intended to serve as mere passages, beyond the north and south transepts and the chancel and chancel aisles. The east end of the nave is polygonal below and rectangular above. The site is on the slope of a steep hill, and thus space is obtained underneath the western portion of the church, and this is utilized for vestry accommodation and Sunday-school rooms. The approach from the basement story to the church is arranged so that the choir may file upwards by two staircases around the font, and then uniting, pass in procession down the central passage of the nave to the chancel. The district of Redruth possesses many striking varieties of building-stone, most of which we propose to make use of in the following manner:

In the first place, granite will be used for all the quoins of the main angles of the building and for the buttresses. The chief element of expense in its use is that of the labor of dressing it, and not of the material itself, for the hills surrounding the town are chiefly composed of granite of the finest quality, samples of which may be seen in the balustrading of the Thames Embankment. The cost of working mouldings, undercutting, or tracery, however, render it inadmissible for such purposes. Box ground Bath stone from the quarries of the Messrs. Pictor has been chosen from among the west-country oolites in consequence of its excellent weather quality, for the finer dressings of the outside, and Corsham Down for those of the inside of the church. But Bath stone will be used as sparingly as possible, and only for the finest of the dressings. The secondary quoins and bands shown on the drawings, are of a local stone of a deep brown color, which, when used alone for huge masses of walling has a very sombre effect, but it forms an excellent bordering to enclose panels of brighter and more cheerfully-colored stones, such as white and red granite spauls, spar, Alvan, and other waste stones obtainable there at almost nominal cost.

The above stones, which are of light gray color, will be used for plain arches. We hope thus to show in solid and picturesque construction the adaptability of the several varieties of the peculiar building stones of the immediate neighborhood, and I am assured by Mr. Hicks that this result will be obtained at less cost than if any one particular kind of stone had been selected for use throughout, for while all those mentioned can be easily obtained in moderate quantities, no one sort can be had in sufficient amount without special quarrying.

I have now exhausted the list of what I had proposed to show you, with the exception of some drawings by Mr. George Frampton, architectural sculptor, of some incised cement work that he has recently executed for me in panels for wooden construction at Birchington-on-Sea, in the Isle of Thanet. Mr. Frampton is prepared to explain to you himself the method of their execution. They are, I think, very suggestive of what may be done to make that class of structure interesting and picturesque. The buildings consist of one-storied residences which we call there bungalows, and blocks of two-storied stabling attached to them. A series of these designs has been carried all round the latter upon a groundwork of black cement, but those on the main buildings are upon red, the figures in both instances being left in the natural color of the cement, tracked here and there with yellow. I had hoped to have had some photographs of the building to show you the general effect, and have not had time to make any special drawing instead.

In conclusion, I have only to apologize for the very desultory nature of these notes, and for the anachronism of the designs exhibited. Of this latter I am painfully conscious, and know that in all probability they will appear very like the last dying speech and confession of a dodo in these days of eclecticism, lacking all that piquancy which a concession to the fashionable mixture of styles would have given them. It is, however, too late for me to learn any other language of art than that I have learnt; I must be content, therefore, if from any of the fossils that I have unearthed, you have been able to glean either instruction or amusement.

FIRES AT AMERICAN HOTELS.

THE frightful catastrophe at Milwaukee, involving the loss of so many lives and the destruction of a hotel well known to travellers in the West before the Plankinton was built, may make of interest some notes on the subject of recent fires at American hotels. On the 30th of March, 1867, the old Lindell House was burned at St. Louis. It was one of the largest hotels in the world, and its burning involved a loss of $1,600,000, but of the 400 guests in the hotel at the time not one was injured, the fire being strongly contrasted in this respect with that at the Spottiswoode House at Richmond, Va., not long before, where several lives were lost. In 1868 the Ocean House at Newport was consumed on the 31st of October, and the Sherman House at Syracuse on the 30th of November. In the great fire at Chicago, October 8, 1871, all the great hotels were destroyed, including the Sherman, Tremont, Briggs, Mattison, Metropolitan, Massasoit, Richmond, Adams, Palmer, the newly completed Grand Pacific—in fact, very little in the way of hotels was left except the Michigan Avenue on the south side and the Eagle on the west. On the 11th of December, 1872, the Fifth Avenue in this city narrowly escaped destruction, ten servant-girls being unhappily suffocated in the dormitories. In 1874 the Grand Hotel at Saratoga was burned on the 1st of October. In 1875 there were reported nearly a dozen fires at hotels, the most important buildings destroyed being Congress Hall at Saratoga, burned in September, and the Gibson House at Charlestown, W. Va., destroyed on the 4th of that month. On the 11th of April, 1877, the Southern Hotel at St. Louis was burned, with a loss of from $750,000 to $1,000,000. Fifteen persons perished in the flames, local rumor having at first set down the number at 200. This was the most destructive conflagration of the sort in the West since the burning, during the war, of the Pacific Hotel at St. Louis, when thirty persons perished in a conflagration kindled by thieves who desired to plunder the house in the confusion or else to conceal a murder. The burning of the Southern provoked a close inquiry into the condition of the hotels of New York—not, it must be said, with very satisfactory results. On the 23d of January, 1881, the dining-room of the Metropolitan Hotel in this city was burned, the hotel and Niblo's Theatre narrowly escaping destruction. There had been a similar disaster in June, 1879. On the 16th of February Dr. Ray V. Pierce's Palace Hotel at Buffalo was destroyed, with a loss of $500,000, and on the 27th of July, Coney Island, which has thus far been very lucky in the matter of fires, received a scare in the burning of the Pierrepont House, with which was consumed the New York and Brighton depot. On the 11th of August the Parry House at Beach Haven, Pa., was burned, the 300 guests escaping from their beds with difficulty. Last month New York just missed two serious disasters, the fire in the Sturtevant House on the 11th being discovered just in time, and the blaze at the New York Hotel four days later being promptly mastered by the firemen. In the adjoining Dominion there have only been two really great fires at hotels during the last quarter of a century—one at Toronto about 1859, when the Rossin House was destroyed, and one at Montreal a few years ago, when several persons were suffocated in the St. James, the fire having cut off escape by the stairways. As to the safety of the average summer-resort hotel, it will only be necessary to cite the fact that an expert sent to Saratoga by the New York Board of Underwriters last year to inspect the heating and cooking apparatus of the hotels there reported that only four were safe.—*New York World.*

MR. J. M. CLARK'S PROPOSED METRIC SYSTEM.

No. 31 Pine St., NEW YORK, January 2, 1883.

TO THE EDITORS OF THE AMERICAN ARCHITECT: —

Dear Sirs, — The enclosed correspondence explains itself. The subject of Mr. Clark's paper is one that is now eliciting much careful thought from scientific men, and I have no doubt but that the readers of your admirably conducted journal will be pleased to have the metric system proposed by Mr. Clark thus succinctly brought to their attention. Very truly yours, etc.,

O. P. HATFIELD.

NEW YORK, December 29, 1882.

MR. JACOB M. CLARK: —

Dear Sir, — Please inform me if your "Metric System" has been published, and if not, whether you would have any objection to my offering it to the *American Architect* for publication.

Very respectfully yours, etc., O. P. HATFIELD.

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119 Liberty St., NEW YORK, December 30, 1882.

MR. O. P. HATFIELD: —

Dear Sir, — An outline of the system, *currente calamo*, was included in my letter to the Committee of the American Society Civil Engineers on Standard Time, last May. The Chairman of the Committee, Mr. Fleming, printed the letter, with all the correspondence they had, in a communication to the President of the American Association for the Advancement of Science, at the Montreal Conference, last summer. Whether it appears in the published reports of that body I do not know.

I afterwards noticed that the mile agreed with the Turkish mile, and was enabled to trace the connection, through the Mosaic cubit, with ancient Oriental systems. I accordingly arranged the system in tabular form, with some marginal notes — as you have it — and distributed hectograph copies of it among thinkers, as I had opportunity, and among others to Mr. Latimer, President of the International Institute for Preserving and Perfecting Weights and Measures. It may appear in some of their publications, or those of the Ohio Auxiliary Branch, or it may not.

The polar axis, as a metric base, was pointedly advocated by Callet, when the present French system was being devised; and either the semi-axis, or the mean radius of the Earth, was probably the foundation of Ezekiel's system. The idea of connecting the *inch* with it did not occur to me until I read Dr. Seiss's work, "A Miracle in Stone." All the attempted arrangements I have seen have been affected in some way by unnecessary factors, and more or less crude notions of itinerary.

The effort on my part has been towards adjusting things more or less familiar, in the interest of ultimate maximum propriety and utility, and in accordance with human experience; and to include the best attainable division of the circle.

I am much obliged for your kind note: and it would certainly gratify me very much, if, under the above explanation, the *American Architect*, or any other scientific journal, shall be willing to aid in presenting the subject to the consideration of thoughtful men.

I have the honor to be truly yours, JACOB M. CLARK.

METRIC SYSTEM PROPOSED BY MR. JACOB M. CLARK.

(Arranged from correspondence with the Committee on Standard Time.)

Adjustment: increase the English inch, and also the Arabian guage or guz (= 25 English inches) each by its 1-1000 part.

For the Arts: Inch decimally subdivided.

Denomination.	Metric Feet.	
City, or Builders' chain,	100.	= 40 cubits = 5 rods = 4 perches. Value, 83.416 + English feet.
" " reed,	10.	= 4.
" " foot,	1.	the natural foot.
" " inch,	.1	= value, 1.001 English inches.

City lot = 30 × 120 feet = 12×48 cubits metric. 10.000 inches metric is the entire boundary of a square acre.

Engineering and Geodesy: Cubit decimally subdivided.

Denomination.	Metric Cubits.	
⊕'s semi-ax's (polar),	10,000,000.	Grand unit for Astronomy and Geodesy.
" Acre (side),	100.	Convenient length for steel tape-chain, value 208.5416 + English feet.
" Perch,	10.	Convenient length for base-bar, value 20.854 + English feet.
" Cubit,	1.	unit for Engineering, levelling, etc.: value 25.024 English inches.

Solid cubit, the measure of Engineering quantities.

Superficial acre of 10,000 square cubits contains 43.489 44-100 square English feet, and differs from the English acre by 1-6 of 1 per cent.

Adaptations for Rural and Commercial Purposes.

8 cubits = metric rod = 200 metric inches, for land, etc.

2 cubits = metric staff = 50 metric inches, for wood, etc. The metric cord = about 1¼ present cord.

Metric ell = 40 metric inches, for cloth, etc.

Circular Measure: Time, arc and angle measure.

Denomination.	Metric Degrees.	
Circle,	240.	The Zodiacal sign = 20 degrees metric.
Metric hour-angle,	10.	The quadrant = 60 " "
" degree,	1.	= 1½ degrees, current division.
" minute, or prime,	.1	
" second,	.01	
" third,	.001	

Geographic: Road and sea measure.

Denomination.	Metric Miles.	
Mean great circle,	24,000.	terrestrial, *upon radius of volume.*
" degree,	100.	terrestrial, *upon radius of volume.*
" offing,	10.	terrestrial, *upon radius of volume.*
Metric mile,	1.	Value = 5472 Eng. ft. = The true Turkish mile, ¼ of ancient parasang, sum of Jewish mile and ½ Sabbath day's journey.
" stadium,	.1	Value = 5472 Eng. ft. = The true Turkish mile, ¼ of ancient parasang, sum of Jewish mile and ½ Sabbath day's journey.
" road-chain,	.01	= Knot measure glass 1-100 of an hour. Mast-length, the height from which (the horizon appears 10 miles away.
" fathom,	.001	= 3 Jewish civic cubits.
" span,	.0001	= 0.2624 cubits = 6 56-100 inches metric.

Metric furlong, or cable-length = 125 fathoms.

(Kilomètre of France = 6 10' of metric mile, very nearly.)

8 Furlongs, or 10 Stadia, or 328 Rods, or 2624 Cubits, or 6560 Feet metric } equal one mile and { ½ Mile = 41 Rods, ¼ Furlong = 41 Cubits, 1-16 Stadium = 41 Feet.

JUSTIFICATION.

ST. LOUIS, January 12, 1883.

TO THE EDITORS OF THE AMERICAN ARCHITECT: —

Dear Sirs, — My apology for this letter is your remarks in your issue of the 6th inst. concerning comments offered by various parties on the management of your journal.

When people are displeased, there is an active incentive to find fault immediately without waiting for some one else to do it for them; but when all moves well, a general silence is all the commendation the most of them are apt to bestow. Their minds are engrossed with daily cares from which there is no distracting call to offer assurances of approbation, and if the matter is ever thought of at all, there is an enervating expectation that some one else with more leisure will do it, and do it better than they can.

For myself, I beg to say that the conduct of the paper from the start has appeared to me very discreet, and in my intercourse with architects and other readers I have met no contrary opinion. I have thought the selections for editorial remark almost always interesting and well treated; the other original matter is generally of value and interest, and the extracts from foreign journals are almost always very acceptable. I can hardly believe that any thoughtful architect would seriously state that he "never cared for the reading matter." A regular subscriber to the leading foreign architectural papers might possibly find in them all the instruction he might care for, but I have observed that those papers occasionally publish liberal extracts from the *American Architect*, and there is much local intelligence of interest, if not of higher value, which is to be found only in your columns.

I have also enjoyed the scholarly quality which has always characterized the paper, a quality which is not so common in journalistic work that its presence may be overlooked.

Concerning the illustrations, the responsibility of always providing every week without omission or delay four pages of acceptable architectural engravings has appeared to me one of the most serious burdens connected with the enterprise. I think the manner in which this has been accomplished so far is most creditable to the managers.

I do not bind the reading matter with the illustrations, because, for utility, I separate the latter, classify them and keep them by themselves. When I want a suggestion about a town-hall I do not want to hunt through a dozen volumes of designs for churches, stores and dwellings.

I prize the monthly sheet of details highly as a check to the tendency to mannerism to which all are subject. I like the Foreign Exchange illustrations which often give some of the best of the illustrations in foreign journals. I could only wish concerning some of them that they were printed to larger scale. I value the "parallels" of towers, dormers, etc., and hope for more of them, and in general my desire would be for precisely the same quality of management in the future as in the past, only *more so.* I hope this letter may not seem to you uncalled for or egotistic.

I am very respectfully yours,

C. E. ILLSLEY.

[It would be unreasonable not to be pleased by what Mr. Illsley says, and we are willing to believe that a large percentage of our subscribers feel as he does even if they do not feel impelled to so express themselves. As for our intentions, we believe that they are all that the most exacting subscriber could require, as our modest aim is simply to publish as perfect and unexceptionable a journal in all its parts as human endeavor is capable of accomplishing. Until all men are made in the same mould, however, we cannot expect that all our subscribers will agree as to the exact time when we shall have attained the sublime altitude our ambition strives after, but every expression of opinion we receive is a help, as it serves as a guide-post to encourage or deter us from the course we are pursuing. We do not object to criticism, and we court suggestion. Indeed, we believe that nothing could be more reciprocally beneficial than for each and every subscriber to send us a postal-card saying, "I approve of this. I disapprove of that." "Give us more of this; not so much of that." It is only by the comparison of suffrages that the golden mean can be determined; for in spite of all their pretense, editors are not omniscient. As in the other walks of life, we learn more from our failures than from our successes, largely because, as Mr. Illsley says, men oftenest have the charitable impulse to tell you you are wrong; but it is a consequence of the general *laissez aller* that owing to some inborn misgiving, which grows in the absence of expressed approval,

we may at any moment discontinue some feature or department of the journal which the majority of our subscribers find peculiarly acceptable. In the past we have occasionally endeavored to ascertain our whereabouts in the fog of uncertainty by addressing to those subscribers who notified us of their desire to discontinue their subscription, a circular letter, courteously worded, begging to be informed of the reason for such discontinuance, not, as may be imagined, with any intention of urging a reconsideration of the order or impugning the justice of the reasons which led to the order being given, but simply and solely to secure from the discontented subscriber some hint which would lead to our making such alterations and improvements in the journal as should result to the greater satisfaction of the remaining subscribers: and should we ever have recourse to the same expedient, we trust that our real motive may be remembered. Mr. Illsley's qualified approval of our habit of reprinting extracts from foreign journals leads us to say that we hold it an editor's chief duty that his journal shall contain the best material procurable, and that originality, as such, is far from being the first essential, and we would much prefer to edit a journal wholly eclectic but of indisputable value, than one which sacrificed the permanent value of his publication to the shibboleth of originality. We have pursued our course in this respect with the less misgiving from the knowledge that a comparatively small percentage of our own subscribers see the extracted articles in their original publications. — Eds. American Architect.]

IMITATION MARBLES.

Pittsburgh, Pa., January 5, 1883.

To the Editors of the American Architect: —

Gentlemen, — I would like to know the name of a firm which can furnish and work imitations of antique marbles for columns, etc., such as "rosso antico," "verde antico," "giallo antico," and "terrazzos" or mosaic floors, and also "stucco lustro." The workmen used to be Italians and Frenchmen, as far as I know.

Very respectfully,

C. Leo Staub.

[Try Guelton Marble Co., 508 West Twenty-Fourth Street, New York, or George W. Seaman, 39 Dey Street, New York. — Eds. American Architect.]

UNUSED DRAWINGS.

To the Editors of the American Architect: —

Dear Sirs,—Can you conveniently refer to an opinion already given by yourselves, or now give one for reference to a client, of the propriety of charging separately for a first set of general plans and specifications, and procuring bids on same, which were subsequently abandoned as too expensive, although made under special directions of building committee without limitation of price, a second set having subsequently been made and executed, and settled for by a division of bill presented for services. Please also name customary proportion to total service. By doing this, you will much oblige

Yours truly,

James Freret.

[It is usual to charge for extra drawings and specifications, but in case of the subsequent execution of the work from new drawings at a reduced scale of expense, the study spent on the first set would be in great part available for the second, and a charge of regular commission for each set as if they were for separate buildings might not be quite equitable. The best way, we think, would be to ask a fair price for the time expended upon the unused set of drawings. — Eds. American Architect.]

NOTES AND CLIPPINGS.

The Subterranean Cable from Paris to Marseilles. — The laying down of the telegraphic wire which is to put Marseilles in direct communication with the capital is being rapidly pushed forward. Two hundred and fifty workmen are at present employed on the right bank of the Rhone, following the high-roads as far as possible. The cable is enclosed in a cast-iron pipe, laid at a depth of 5 feet 6 inches underground, the joints of the pipes being covered with India-rubber washers and leaden rings. About every 550 yards the cable passes through a covered chamber of cast-iron fitted with a man-hole, by means of which it can be inspected. About every 110 yards the pipes are connected by cast-iron boxes, which also enable the wires to be inspected and repaired. The expense of the whole work is estimated at forty million francs, or £1,600,000. When this line (which may be said to traverse the length of France) shall be completed, it is intended to connect it with the Transatlantic and Mediterranean cables. — *Engineering.*

Mont Saint-Michel Threatened. — Every one will sympathize with the efforts which were made a day or two ago in the French Chamber to save Mont Saint-Michel from ruin. It appears that the buildings have been in imminent danger for the last year or so, owing to a dike which has been constructed to connect the island with the mainland. A protest was made in the Chamber a year ago against this piece of "scientific barbarism" on the part of the engineers, and the Minister of Fine-Arts was instructed to confer with the Minister of Public Works on the subject. Nothing, however, has come of these negotiations, which have been further complicated by the intervention of the Minister of Marine, who has put in a claim to be the official most concerned. Meanwhile the sea, "whose interference is always in order," has made some serious breaches, and unless the dike is promptly destroyed the architects of the Fine-Arts Department and the engineers of the Public-Works Department will soon have the congenial task on hand of "restoring" the present buildings. A new commission, on which no engineers are to sit, is to be at once appointed; but should it report in favor of destroying the dike not only the Minister of Marine but the Minister of War is to be first consulted, so that the prospects of saving Mont Saint-Michel do not seem to be very hopeful. — *Pall Mall Gazette.*

Indictment against a City. — At the September (1881) term of the Superior Court the City of Portland, Me, was indicted for allowing sewer deposits to accumulate in a dock, creating a nuisance. The defendant demurred, contending that the municipal corporation could not be indicted for a nuisance of that nature. The opinion of the full bench, just received, sustains the indictment.

Roman Catholic Cathedral for London. — London's new Roman Catholic cathedral, to cost $1,250,000, is probably to be begun in the spring.

Tintern Abbey Threatened. — "The shade of Wordsworth," writes an indignant correspondent, "will surely arise and protest against the rumored proposal of the Midland Railway to construct a new line close to the ruins of Tintern Abbey. Is 'the still, sad music' of humanity which now vibrates in the memory amid such scenes of undisturbed repose to be exchanged for the shrill scream of the railway whistle? Are those 'steep woods and lofty cliffs, and that green pastoral landscape,' which were endeared to Wordsworth both for themselves and for his sister's sake, to be polluted by cuttings and sidings, and are the worshippers of nature, to whom the ruins have been invested with a new charm by the lines of the poet, to be banished from the spot? To justify the destruction of the privacy of the winding Wye at Tintern, the strongest proofs of the necessity of the new line of railway must be required, and there can be little doubt that the wants of the district are fully met by the existing accommodation." — *Pall Mall Gazette.*

Historic London Fires. — Alluding to the recent conflagration in London a contemporary calls to mind the fact that London has suffered more than any city, save Rome and Alexandria, by fire. So early as 786 the rude city of the Anglo-Saxons was completely obliterated. In 982 the rebuilt city was almost destroyed. In 1086, under the Normans, when some pretence to architecture had been evinced by the conquering race, every church and house from the east gate to the west was burned down. In 1212 it was almost completely destroyed again. In 1665 a fire began in an obscure wooden house in Pudding Lane, and continuing for three days, traversed the very same district outlined in the dispatches. Buildings on 436 acres, subdivided into 400 streets, were left an undistinguishable mass of ruins. The loss included St. Paul's Church, the Guild Hall, the Royal Exchange, the Custom House, twenty hospitals, eighty-six parish churches and six chapels, fifty-two halls of royal guilds, together with many stately edifices, including bridges over the Thames, Newgate and other prisons. Only six persons, however, were killed, and the loss in cash was set down at $51,000,000. The city recovered with difficulty from this dreadful calamity, but the lesson seems to have been unheeded, for the crowded buildings went up on the same sites and the city has several times since 1666 suffered enormous losses — notably in 1794, when 630 houses were burnt in one conflagration, and again in 1834 and 1861, when the Parliament Houses and docks were destroyed. Tenaciously conservative in this respect as in all others, the English refuse to be governed by experience or take lessons from their neighbors. For it is remarkable that Paris and other Continental cities, though frequently in peril, have never, even when set on fire, suffered to the same extent as the British capital. — *Fireman's Journal.*

An Incombustible House. — According to the Reading (Pa.) *Eagle*, Mr. George L. Huston of Parkesburg, Pa., contemplates the erection of a private mansion which will be built entirely of iron, except the foundations, which are to be of solid rock. The floor of the hall, vestibule and library will be laid with polished cast-iron tiles, and by using different qualities of iron it is thought that a very pleasing effect will be produced. All the other floors of the house will be of stout iron plates firmly bolted to the iron joists. The outside walls and inside partitions all through the structure will be composed of two courses of iron plates firmly bolted together, so as to be air-tight. These hollow iron walls and partitions will be used instead of chimneys and for conveying heat to different parts of the house, and for ventilation. The hot smoke and gases from the furnaces passing through the sides of the rooms in this way will, it is claimed, be almost sufficient to keep the house comfortable in the coldest weather. All the doors and window-sashes will also be of iron, but will be constructed in such a light way and so nicely balanced upon hinges and weights as to open and shut as easily as those made of wood. All the inside walls and partitions will be handsomely painted and frescoed, so as to present the appearance of an ordinary house finished in plaster. Outside, the style of architecture will be light and graceful, and it will be painted and ornamented so as to look as if it was built of wood. The roof will be of strong boiler-plate, and on the top, at the convergence of the four gables, will be a handsome observatory supported at the corners by four Ionic pillars of iron. Inside, the ornaments will be of the same material. In the parlor will be a mantel of polished steel, handsomely ornamented. There will be a similar one in the dining-room, upon which will be engraved hunting scenes. In the library will be a massive mantel so constructed that it will look as if it was made of pig iron fused together. Quite a curiosity in this room will be a cabinet for the exhibition of specimens of iron. This will be constructed entirely of strongly magnetized iron, so that all the specimens will adhere to the back of it, held in place solely by magnetic attraction. In order to guard against the bulging which would take place in such a solid iron structure on account of the contraction and expansion caused by the heat and cold, there will be breaks in the iron at intervals which will be filled with rubber, so that when expansion takes place there will be room for it without producing any change in the contour of the framework. As much as possible of the furniture will also be of iron, so that if it takes fire in any part nothing can burn but the carpets and the few articles of wood that may be within reach of the flames. The house will be an architectural and scientific curiosity. Mr. Huston admits that it may cost twice or three times as much as an ordinary house, but claims that with a little attention it will last for centuries without repairs, and will never cost a cent for insurance.

BUILDING INTELLIGENCE.

(Reported for The American Architect and Building News.)

[Although a large portion of the building intelligence is provided by their regular correspondents, the editors greatly desire to receive voluntary information, especially from the smaller and outlying towns.]

BUILDING PATENTS.

[Printed specifications of any patents here mentioned, together with full detail illustrations, may be obtained of the Commissioner of Patents, at Washington, for twenty-five cents.]

270,199. DOOR-KNOB ALARM. — Alonzo T. Boone, Chicago, Ill.

270,200. AUGER AND GIMLET. — William W. Brigg, Washington, D. C.

270,211. WATER-CLOSET SHUT-OFF. — John Farthing, Chicago, Ill.

270,229. SASH-HOLDER. — George W. Lewin, Fall River, Mass.

270,281. APPARATUS FOR SUPERHEATING STEAM AND HEATING AIR. — Solomon N. Carvalho, New York, N. Y.

270,295. LIFE-SAVING APPARATUS FOR PRIVY-VAULTS. — John Fleck, Louisville, Ky.

270,297. SHINGLING-MACHINE. — Alexander Fraser, Detroit, Mich.

270,309. WICKET. — M. La Rue Harrison, Washington, D. C., and Franklin Underhill, Stamford, Conn.

270,310. SHUTTER-WORKER. — John W. Harrison, Wheeling, W. Va.

270,332. FIRE-EXTINGUISHER APPARATUS. — William K. Platt, Philadelphia, Pa.

270,333. CASING FOR WATER-CLOSETS. — Charles F. Pike, Philadelphia, Pa.

270,334. COCK FOR WATER-CLOSETS. — Charles F. Pike, Philadelphia, Pa.

270,335. WATER-CLOSET. — Charles F. Pike, Philadelphia, Pa.

270,337. CONSTRUCTION OF GLAZED ROOFS. — John E. Rendle and Frank B. Rendle, Westminster, England, and David H. Wilson, Hyères, Var, France, executors of Wm. E. Rendle, deceased.

270,340. DEVICE FOR OPENING AND CLOSING SKYLIGHTS. — Jeffrey H. Rose, Brooklyn, N. Y.

270,347. SASH-FASTENER. — Elbridge J. Steele, New Britain, Conn.

270,356. COMBINED WRENCH AND PINCHERS. — Samuel L. Willmer, Anderson, Cal.

270,359. DRYING HOUSE OR KILN. — William A. Allen, Jersey City, N. J.

270,368. DOOR-SPRING. — Warren S. Barlow, Paterson, N. J.

270,379. LIGHTNING-ROD. — John H. Brandon, Chicago, Ill.

270,419. SAW-HANDLE. — Benjamin Goulton, Kaco, Wangaroa, New Zealand.

270,425. ADJUSTABLE WINDOW-CORNICE. — Wm. C. Hamnett, Toledo, O.

270,436. ROOFING COMPOUND. — Horace H. Hutchins, Maquoketa, Iowa.

270,450. SILICATED PAINT. — Michael Mathes, Jersey City, N. J.

270,451. FIRE-ESCAPE. — Wm. McCaughey, Greenville, O.

270,469. WINDOW-SCREEN. — Richard J. Parrett, Portland, Ind.

270,473. STENCH-TRAP. — Herman Pietsch, Flatbush, N. Y.

270,476. SEWER AND DRAIN TILE. — George J. M. Porter, Princeton, Ill.

270,532. SAWING AND CHANNELING MACHINE. — Daniel W. Williams, Springville, Cal.

270,542. SASH-FASTENER. — Howard B. Frost, New Britain, Conn.

270,554. EXPANDING ROSE-BIT. — Theodore G. Pelton, Lyons, Iowa.

SUMMARY OF THE WEEK.

Baltimore.

DWELLING. — Mr. Chas. L. Carson, architect, is preparing drawings for a residence for Dr. H. P. C. Wilson, on Park Ave. It is to be of brick and stone, 16′ x 80′, and to cost $10,000.

LOCOMOTIVE-WORKS. — The locomotive-works of Messrs. T. H. Paul & Sons, at the s e cor. of Wells and Bird Sts., are nearing completion. Two buildings are already under roof. One of the buildings, 55′ x 155′, running parallel with Wells St., will be used for the erection of locomotives. The second building, 40′ x 140′, will be fitted up for the manufacture of the various parts going to make up a locomotive. A foundry-building will be erected as soon in the coming spring as possible.

BUILDING PERMITS. — Since our last report nine permits have been granted, of which the following are the more important: —

Buck & Jackson, 5 two-st'y brick buildings, w s Camel Alley, between Preston and Biddle Sts.; also 11 two-st'y brick buildings, w s Mason Alley, between Linden Ave. and Bolton St.

John Weitzell, 4 two-st'y brick buildings, e s Madeira Alley, 57′ s of McElderry St.

Louis Wese, 3 two-st'y brick buildings, w s Fremont St., 40′ s of Winchester St.

S. T. Richardson, 2 two-st'y brick buildings, w s Vincent Alley, between Lorman and Presstman Sts.

Thompson & Stone, 9 two-st'y brick buildings, e s Castle St., between McElderry and Monument Sts.

Ida V. Rutter, two-st'y brick building, s s Miller St., between Bond St. and Broadway.

Geo. W. Harper, three-st'y brick building, with two-st'y brick back building, n e cor. Oliver St. and Central Ave.

Boston.

BUILDING PERMITS. — *Brick.* — *Marginal St.*, rear, nearly opposite Lamson St., Ward 2, for Boston & Albany Railroad, one-st'y pitch engine-house, 20′ x 30′.

George St., No. 32, rear, Ward 20, for Thomas F. Scanlon, one-st'y flat dry-house and manufactory, 25′ x 32′; Edward Lynch, builder.

George St. No. 32, rear, Ward 20, for Thomas F. Scanlon, one-st'y flat dry-house and manufactory, 25′ x 32′, with ell, 16′ x 40′; Edward Lynch, builder.

Old Harbor Point, near Harbor View St., Ward 24, for city of Boston, one-st'y pitch pumping-station, 134′ x 223′ 9″.

Wood,—Grove St., rear, near Washington St., Ward 23, for Louis Weber, one-st'y pitch storage, 16′ x 18′; John String, builder.

River View St., cor. Huntoon St., Ward 24, for Nathan Hunt, two-st'y pitch dwell., 20′ x 40′; F. M. Severance, builder.

River View St., Ward 24, for Nathan Hunt, two-st'y pitch dwell., 20′ x 40′; F. M. Severance, builder.

Harwood St., near Wales St., Ward 24, for Samuel P. Falkner, owner and builder, two-st'y pitch dwell., 20′ and 24′ 6″ x 30′.

Maxwell St., near Milton Ave., for Battista Graziana, two-st'y pitch dwell., 20′ and 24′ x 28′; ell, 13′ x 15′.

Huntoon St., near Butler St., for Joseph H. Whitney, one-st'y pitch dwell.

I St., rear, near East Ninth St., Ward 14, for Michael Shady, one st'y pitch boat-storage, 20′ x 40′; Henry Borden, builder.

Unnamed St., near Quincy St., Ward 24, for Ada C. Rice, one-st'y flat building for mechanical purposes, 20′ x 30′; Thomas Rice, builder.

Milton Ave., near Evans St., Ward 24, for Hammond H. Haskell, 2 two-st'y pitch dwells., 15′ and 26′ x 34′; ells, two-st'y, 16′ x 18′; Stinson & Cleveland, builders.

Terrace Ave., near Ashley Ave., Orient Heights, for John C. Barrett, two-st'y hip dwell., 26′ x 34′; Judah Bacon, builder.

Regent Sq., No. 5, Ward 21, for Geo. L. Thayer, one-st'y mansard dwell., 19′ and 23′ x 28′ and 39′; one-st'y mansard dwell., 19′ and 23′ x 39′ and 44′; ells, 14′ x 17′.

Brooklyn.

SCHOOL-HOUSE. — Clarence S. Luce, of Newport, has been awarded the prize of $250 in the late school-house competition.

BUILDING PERMITS. — *Seventeenth St.*, n s, 200′ e of Fifth Ave., 5 three-st'y frame tenements, tin roofs; cost, each $2,500; owner, E. F. Hermans, 256 Prospect Ave.; architect and builder, Geo. Hermans; mason, not selected.

Suydam St., n s, 160′ e of Broadway, two-st'y frame tenement, tin roof; cost, $3,000; owner, J. Freitag, 214 South Third St.; architect and builder, Peter Johnson.

Gates Ave., n s, 270′ e of Classon Ave., 3 three-st'y brick dwells., tin roofs; cost, each $10,000; owner and builder, D. H. Fowler, 14 Verona Place; architect, A. Hill; mason, W. Raul.

McKesson Place, n s, 265′ w of Schenectady Ave., 15 two-st'y frame dwells., gravel roofs; cost, each about $1,500; owner, J. McKesson; architect and builder, W. J. Wilson.

Stagg St., Nos. 262 *and* 274, s s, 175′ and 325′ w of Waterbury St., 2 two-st'y frame tenements, tin roofs, cost, $5,000; owner, Chas. R. Baker, 244 Washington Ave.; architect, T. Engelhardt; builders, J. Rauth; and C. Wilbur.

Chicago.

HOUSES. — J. O. Smith will build a house in Winnetka, a suburb of Chicago, on the lake shore, on the seaside plan, with large verandas; Messrs. Edbrooke & Burnham furnish the plans; cost, $10,000.

George P. Dunham is to build a fine residence at Evanston, another suburb of Chicago, from designs by the same architects, which will cost $10,000.

John C. Cummings will build a residence on Dearborn Ave., to cost $10,000, from designs by the same architects.

Henry Neuviler has taken out permit for two-st'y and basement residence, 22′ x 65′, of pressed brick and stone finish, at 557 Larrabee St.; cost, $5,500; J. W. Ackerman is the architect.

APARTMENT-HOUSE. — F. Welsh is to build three flats, on the corner of Dearborn and Thirtieth Sts., 22′ x 65′ each, of Indiana pressed brick and stone trimmings, to be two-st'y and cellar, and will cost $15,000; from plans by J. W. Ackermann.

CLUB-HOUSE. — The Chicago Jockey Club, it is said will build a $500,000 club-house.

BUILDING PERMITS. — J. S. Clark, three-st'y and basement brick dwell., 26′ x 80′, 356 Ohio St.; cost, $15,000.

Henry Neuviler, two-st'y brick dwell., 22′ x 65′, 557 Larrabee St.; cost, $5,500.

Andrew Scott, five-st'y and basement brick store and dwell., 24′ x 90′, No. 86 Fourth Ave.; cost, $22,000.

E. S. Blood, one-st'y brick store, 20′ x 42′, 3109 Archer Ave.; cost, $1,400.

Ed. Horner, one-st'y cottage, 22′ x 50′, 2919 Archer Ave.; cost, $2,500.

M. Mercer, three-st'y brick store and flats, 23′ x 75′, 329 Polk St.; cost, $6,000.

Arnold Bros., two-st'y brick flats, 50′ x 60′, Irving Pl., near Adams St.; cost, $9,000.

Mary Fahey, one-st'y brick cottage, 20′ x 50′, 549 West Ohio St.; cost, $1,200.

Mrs. Day, two-st'y brick dwell., 25′ x 60′, 3631 Ellis Ave.; cost, $6,000.

Wm. Pound, three-st'y brick dwell., 20′ x 60′, 3835 Johnson Pl.; cost, $5,000.

O. M. Wells & Co., one-st'y brick cottage, 20′ x 40′, on Taliman St., near Milwaukee Ave.; cost, $1,200.

John Bednorz, three-st'y and basement brick stores and flats, 49′ x 160′, 88 Fisk St.; cost, $10,000.

C. E. Robinson, three-st'y brick store and dwell., 30′ x 40′, 561 and 563 South Clark St.; cost, $6,000.

P. A. Cashman, two-st'y brick dwell., 20′ x 50′, 1222 West Harrison St.; cost, $2,500.

Cincinnati.

HOUSES. — Brick residence for Mr. A. Enneking, Woodburn Ave., Walnut Hills; cost, $6,500; Geo. W. Rapp, architect.

Double limestone dwell., cor. of Grand Ave. and Nassau St.; cost, $14,000.

BANK-BUILDING. — It is rumored that the Emery Brothers will erect an eight-st'y building on the site of St. Paul's church, recently purchased by them, to be used as a bank on the first floor and offices above. The lot is 66′ front on Fourth St. and 100′ deep; the building to be of the best character throughout; Mr. Samuel Hannaford, architect.

ADDITION. — Mr. A. E. Muth is to build an addition to his bakery on Central Ave., from plans prepared by Mr. E. Anderson, architect. The building is four-st'y, 37′ x 47′, and will cost $10,000.

STORES. — James S. Armstrong has let contracts for the building of two stores on Third St., near Elm, from plans prepared by Mr. Henry Bevis, architect, 62′ x 100′, five-st'y, freestone front; cost, $45,000.

CLUB-HOUSE. — Mr. Geo. W. Rapp, architect, has prepared plans for a club-house for the Walnut Hills Club, to be built of frame, on s w cor. of Moonman Ave. and Clay Sts.; cost, $7,000.

New York.

CASINO. — Though the Casino is open, the work is not yet completed on the building, and Messrs. Kimball & Wisedell are still at work on plans of the interior.

BANK. — The Citizens' Savings Bank is to have an important addition, 25′ x 85′; the entrance is to be remodelled; the improvements will cost $40,000; Mr. F. C. Withers is the architect.

BUILDING PERMITS. — *Nassau St.*, e s, from Cedar St. to Liberty St., nine-st'y brick and stone office-building, fire-proof roof; cost, $1,000,000; owner, Mutual Life Insurance Co., 144 Broadway; architect, Chas. W. Clinton; mason, Joseph Thompson.

One Hundred and Forty sixth St., s s, 125′ e Wills Ave., two-st'y frame tenement, tin roof; cost, $3,000; owner, Elizabeth Muller, 666 One Hundred and Forty-sixth St.; architect and builder, Louis Falk.

Thirty-eighth St., s s, 75′ e Sixth Ave., five-st'y brick store, tin roof; cost, $15,000; owner, Gustas H. Safft, 1382 Broadway, architect, V. B. Ferdon; builder, Jas. P. Niblo.

Third Ave., n e cor. One Hundred and Fourth St., five-st'y brick flat and store, tin roof; cost, $18,000; owner and builder, Thos. Fealey, n e cor. Third Ave. and One Hundred and Sixteenth St.; architect, Barth Walter.

Third Ave., e s, 20′ n One Hundred and Fourth St., 3 five-st'y brick flats and stores, tin roofs; cost, each, $15,000; owner, builder and architect, same as last.

One Hundred and Fourth St., n s, 72′ e Third Ave., four-st'y brick tenement, tin roof; cost, $13,000; owner, builder and architects, same as last.

Second Ave., s w cor. One Hundred and Fourth St., 4 four-st'y brownstone front tenements and stores, tin roofs; cost, each $12,500; owner, Ellen Murray, 315 East One Hundred and Sixteenth St.; architect, Andrew Spence.

One Hundred and Sixth St., s s, 73′ w of Second Ave., four-st'y brownstone front tenement, tin roof; cost, $13,500; owner and architect, same as last.

One Hundred and Fourth St., n s, 250′ e of Ninth Ave., three-st'y brownstone front dwell., tin roof; cost, $18,500; owner, Charles D. Thompson, 21 West Eleventh St.; architect, Geo. M. Huss; builder, J. Coar.

St. Nicholas Ave., n w cor. One Hundred and Fifty-fourth St., 11 three-st'y brick dwells., mansard slate roofs; cost, each, $9,000; owner, John Kelly, 34 East Sixty-ninth St.; architect, Jas. Stroud.

Fifty-first St., s s, from Broadway to Seventh Ave., two-st'y brick stable, tin roof; cost, $35,000; lessee, C. Alfred Skrine, 363 West Forty-second St.; architect, H. J. Dudley.

Fifty-ninth St., n s, 30′ e of Ninth Ave., five-st'y brick tenement and store, tin roof; cost, $18,000; owner, Mary J. Odell, 48 West Thirty-third St.; architect, Jno. Sexton; builder, E. H. Miller.

Fourteenth St., s s, 180′ e of Thirteenth Ave., three-st'y brick factory, gravel roof; cost, $14,000; owner, Electric Candle Co., Fourteenth St., cor. Thirteenth Ave.; builders, O. E. Perrine and J. G. McMurray.

Twenty-third St., s s, 180′ w of Seventh Ave., twelve-st'y brick flat, brick roof; cost, $300,000; owners, Thomas C. Van Brunt, et. al.; architects, Hubert Pirsson & Co., 19 East Twentieth St.

East Twenty-fourth St., No. 331, five-st'y brick tenement, tin roof; cost, $18,000; owner, Chas. Watkins, 302 East Forty-first St.

ALTERATIONS. — *Wooster St., No.* 104, raise attic, new flat roof and one-st'y brick extension, etc.; cost, $5,250; owner, Geo. Rueckert, 116 Canal St.; architect, F. Klemt; builders, Wagner & Pfeiffer.

Park Row, Nos. 13 *and* 15, raise one-st'y; cost, $10,000; owner, John H. Cheever, 89 Fifth Ave.; architect, Geo. E. Harding.

Fulton, Water and Pearl Sts., United States Hotel, interior and exterior alterations; cost, $10,000; owner, Daniel C. Blodgett, 43 West Eighteenth St.; architect, James .M Magregor; mason, Wm. Haw.

Market St., No. 52, raise attic to full story, new flat roof; also, a three-and-one-half-st'y brick extension; cost, $4,000; owner, Henry Schmuetsh, 85 South St.,; architect, Chas. Schmeiser.

Philadelphia.

BUILDING PERMITS.—*Paschall St.*, n s, near Sixtieth St., one-st'y mill, 60′ x 60′; J. J. Hunter, owner.

Wyalusing Ave., n s, bet. Fifty-fourth and Fifty-fifth Sts., two-st'y slaughter-house and stable, 16′ x 40′; Chas. Christine, owner.

Main St., w s, bet. Mt. Pleasant and Carpenter Sts., three-st'y brick building, 19′ x 20′; Tourison Bros., contractors.

South Fifth St., No. 260, three-st'y factory and two-st'y foundry, 30′ x 60′ and 30′ x 32′; Yeaton & Harris, owners.

Bailey St., s w cor. Oxford St., two-st'y dwell., 19′ x 36′; Christian Siebel, owner.

Jasper St., n w cor. Clearfield St., rebuilding dye-house, 16′ x 32′; Dickson Bros., contractors.

Twenty-sixth St., w s, n of Pine St., two-st'y stable, 35′ x 70′; Thompson & Bro., contractors.

St. Louis.

BUILDING PERMITS. — Thirteen permits have been issued since our last report, of which seven are for unimportant frame houses. Of the rest, those worth $2,500 and over are as follows: —

Mrs. Heath, two-st'y brick dwell.; cost, $2,600; C. H. Burch, contractor.

Nagel & Johnston, two-st'y brick dwell.; cost, $6,300; contract sub-let.

H. Seisnal, two-st'y brick dwell.; cost, $5,000; I. Stock, contractor.

Culver Bros., one-st'y foundry; cost, $10,000; W. C. Slicer, architect; contract sub-let.

Bids and Contracts.

DANVILLE, VA. — The following is a synopsis of bids received for glass for the court-house, etc., at Danville, Va.

Edward A. Boyd & Sons, $593.92; John Gibson, $755; Joseph Thomas & Son, $845; William Glenny & Co., $725; Holbrook Bros., $932.55. The bid of Edward A. Boyd & Sons, the lowest, has been accepted.

PADUCAH, KY. — The following is a synopsis of bids received at this office under advertisement dated December 4, 1882, for plastering for the court-house and post-office at Paducah, Ky.

Joseph Eastman, $2,450; Smith & Crimp, $2,595; Hedges & Vint, $3,727.80; James Hughes, $4,032; D. W. Lloyd, $4,200; Mike J. Ford, $4,700. The lowest bid has been accepted.

TOPEKA, KAN. — The following is a synopsis of bids for slating the roofs of the court-house and post-office building at Topeka, Kan. (advertisement of December 15, 1882): Knisely Bros. & Miller, $2,800; W. W. Selby (informal), $2,800; Edward Williams, $2,860; George B. Clarke, $4,100. The bid of Knisely Bros. & Miller has been accepted.

General Notes.

ALBANY, N. Y. — There was paid from the Treasury for the construction, etc., of the new capitol during the fiscal year ending September 30, 1882, as follows:

Advances to commissioners	$1,210,000.00
For expenses and maintenance	56,156.25
Interest on award for lands	600.00
Total	$1,266,756.25

BEDFORD, N. Y. — Mr. James F. Sutton is building a large ice-house, bowling-alley building, and other out-buildings from the designs of H. Edwards Ficken, of New York.

WINONA, MINN. — Below is a recapitulation of several columns of matter in one of our daily papers, relating to the building improvements, etc., finished in this city during the past year: —

Pumping-works and extension of water-mains	$60,000
Ferry-road	15,000
Churches	35,200
Schools and grounds	7,000
Business blocks and improvements	35,000
Elevators and warehouses	25,000
Manufactories	194,800
Residences	200,000
Gas works and mains, estimated	3,000
Miscellaneous improvements	20,000
Total	$595,000

SWAMPSCOTT, MASS. — The Ocean House, at Swampscott, which was burned last fall, is to be rebuilt in the Queen Anne style, by Messrs. Hatch & Fernald, of Lynn. The building will be five-st'y, 70′ x 200′; its estimated cost is $75,000.

WASHBURN, ME. — A Baptist church is building here.

WINNIPEG, MANITOBA, B. N. A. — A large brick church and parsonage has just been completed here for the First Congregational Church, at a cost of about $40,000; J. Greenfield, architect.

PROPOSALS.

BRIDGE MASONRY. [At La Passe, Can.]

Tenders will be received **up to the 8th of February next**, for the putting in the foundations and building the masonry for a bridge over the Ottawa River at La Passe; also, for the iron superstructure of same, erected complete to receive the track.

Plans and specifications may be seen on and after the 16th January next, at the contractor's office, No. 7 Place d'Armes Hill, Montreal.

C. N. ARMSTRONG,
370 Contractor.

HEMLOCK PLANK. [At Montreal, Can.]

HARBOR COMMISSIONERS' OFFICE, MONTREAL, January 15, 1883.

The Harbor Commissioners of Montreal invite tenders for the supply of about 450,000 feet board measure hemlock plank for 1883, according to specifications to be obtained at the office of Mr. John Kennedy, Chief Engineer.

Tenders addressed to the undersigned will be received **until Tuesday, the 23d inst., at 12 o'clock, noon.**

The Commissioners do not bind themselves to accept the lowest or any tender.

H. D. WHITNEY,
369 Secretary.

POST-OFFICE FITTINGS. [At Belleville, Ont.]

DEPARTMENT OF PUBLIC WORKS, OTTAWA, January 9, 1883.

Sealed tenders, addressed to the undersigned, and endorsed "Tender for Fittings," will be received at this office **until Tuesday, the 6th day of February next**, for the new fittings required in the post-office, Belleville, Ont.

Plans and specifications can be seen and all necessary information obtained at the custom-house, Belleville, and at the Department of Public Works, Ottawa, on and after Tuesday, the 16th day of January.

Tenders must be made on the printed forms supplied.

Each tender must be accompanied by an accepted bank check, made payable to the order of the Hon. the Minister of Public Works, equal to five per cent of the amount of the tender, which will be forfeited if the party decline to enter into a contract when called on to do so, or if he fail to complete the work contracted for. If the tender be not accepted, the check will be returned.

The Department will not be bound to accept the lowest or any tender.

By order, F. H. ENNIS,
370 Secretary.

PROPOSALS.

COURT-HOUSE. [At Charlotte, Mich.]

In consequence of the destruction of the plans for Eaton County Court-House, by the burning of the architect's office in Hall Block, Toledo, O., the date of the letting of the contracts is postponed to January 24, 1883.

D. W. GIBBS & CO.,
Architects.

LOCK. [On the Great Kanawha River, W. Va.]

U. S. ENGINEER OFFICE, CHARLESTON, KANAWHA CO., W. VA., December 10, 1882.

Proposals for building lock No. 2, of the Great Kanawha River, will be received **until noon of January 31, 1883**, and opened immediately thereafter.

Blank forms and specifications can be had upon application at this office.

E. H. RUFFNER,
370 Captain of Engineers.

DIKE. [At New Haven Harbor, Conn.]

U. S. ENGINEER OFFICE, NEW LONDON, CONN., Dec. 23, 1882.

Sealed proposals, in triplicate, will be received at this office **until 11 o'clock A. M. on the 23d day of January, 1883**, for constructing a dike in New Haven Harbor, Conn., to be built partly of rip-rap stone, partly of piles and stone.

Specifications and blank forms for proposals and for guaranty will be sent on application to this office.

J. W. BARLOW,
370 Major of Engineers.

WATER-MAINS, ETC. [At Wakefield, Mass.]

WAKEFIELD, MASS., January 10, 1883.

Sealed proposals for furnishing water-pipes, watergates and fire-hydrants, and for laying and setting the same will be received by the Quannapowitt Water Company, of Wakefield, Mass., **until noon of Wednesday, January 24, 1883.**

Specifications and blanks will be furnished to bidders only on application to the engineer.

The right to reject any or all proposals is reserved.

CYRUS WAKEFIELD, President,
369 PERCY M. BLAKE, Engineer.

IRON CHAINS. [Near Pittsburgh, Pa.]

U. S. ENGINEER OFFICE, 82 WEST THIRD ST., CINCINNATI, O., January 8, 1883.

Sealed proposals, in duplicate, will be received at this office **until 12 o'clock, noon, on Friday, the 16th day of February, 1883**, for furnishing and delivering at Davis Island Dam, on the Ohio River, five miles below Pittsburgh, Pa., about twenty-five thousand pounds of half-inch iron chains of the best quality. Specifications and all necessary information may be obtained on application to the undersigned or to Capt. F. A. Mahan, Corps of Engineers, P. O. Box 70, Pittsburgh, Pa.

WM. E. MERRILL,
371 Major of Engineers.

FIRE-ENGINE HOUSE. [At Providence, R. I.]

OFFICE OF THE SUPT. OF PUBLIC BUILDINGS, CITY HALL, PROVIDENCE, Dec. 28, 1882.

Sealed proposals, addressed to the undersigned, for the construction of a building, to be erected upon the lot owned by the city, fronting on North Main and Mill Streets, to be used as a fire station and ward room, will be received at the office of the Superintendent of Public Buildings, City Hall, **until 12 M., Friday, January 19th, 1883.**

Plans and specifications may be seen and information obtained at the office of Wm. R. Walker & Son, architects, No 27 Custom House Street.

The right will be reserved to reject any or all bids for the work.

JAMES McNALLY,
369 Chairman Committee on City Property.

FURNITURE. [At New York, N. Y., and Danville, Va.]

OFFICE OF THE SECRETARY, TREASURY DEPARTMENT, WASHINGTON, D. C., January 12, 1883.

Sealed proposals will be received at this office **until 1 o'clock, P. M., of Saturday, February 3, 1883**, for manufacturing, delivering, and placing in position, in complete working order, certain furniture for the United States Barge Office at New York, N. Y., and United States Court-House and Post-Office at Danville, Va.

Upon application to this office detailed information will be furnished to furniture manufacturers desiring to submit proposals.

The Department reserves the right to reject any or all bids, or parts of any bid, and to waive defects.

WM. F. FOLGER,
370 Secretary.

LUMBER. [At Boston, Mass.]

CITY HALL, January 15, 1883.

Sealed proposals will be received at the office of the Clerk of Committees, City Hall, Boston, **until Monday, January 29, 1883, at 12 o'clock, noon**, for furnishing all the sawed spruce lumber required for the ordinary repairs of the bridges in Boston, which are in charge of the committee on bridges for the current year. The lumber furnished to be of the qualities known at Nos. 1 and 2, Boston Survey; to be of such dimensions and delivered at such bridges in such quantities and at such times as may be required or directed by the committee, or its duly authorized agent or agents.

Bids must state the price per 1,000 feet, delivered as required, and bonds will be required for the faithful performance of the contract.

Any further information can be obtained at the office of the City Engineer, City Hall.

The right to reject any and all bids is hereby reserved, and the acceptance of any is subject to the approval of the Board of Aldermen.

Proposals must be marked "Proposals for Lumber," and addressed to WILLIAM WOOLLEY,
369 Chairman Committee on Bridges.

PROPOSALS.

SCHOOL-HOUSE. [At Home City, O.]

Sealed proposals will be received by the Board of Education of the Delhi Station School District No. 6, **until Monday, February 5, 12 o'clock, M.**, for the materials and labor required for building an eight-room school-house in Home City, Hamilton County, O., according to plans and specifications on file at the office of S. Hannaford, architect, Room 18, Palace Hotel Building, Cincinnati, and at the office of Dr. John Campbell, Home City.

Bids must be on blank forms, to be obtained at either office.

Each bid must contain the name of every person interested therein, accompanied by a sufficient guaranty by some disinterested person in a penalty equal to the amount of the bid, that if the bid is accepted the contract will be entered into, and the performance of it properly secured.

All bids must be addressed to R. H. Gibson, Clerk of the Board, at Delhi, O., or 174 Elm St., Cincinnati, O.

The right is reserved to reject any or all bids.

By order of the Board of Education.

370 R. H. GIBSON, Clerk.

COURT-HOUSE. [At Caledonia, Minn.]

Sealed proposals will be received by the building committee of the County Commissioners of Houston County, Minnesota, **until March 21, 1883**, at the office of the Auditor, in Caledonia, for the construction of a stone court-house for said county, according to plans and specifications of same now on file at the Auditor's office, and at the office of the architects, C. G. Maybury & Son, Winona, Minn., who will give any further information desired.

No bids will be received except for the whole building complete as specified.

The successful bidder will be required to give bonds in the sum of $5,000.

The right to reject any and all bids is reserved.

By order of Building Committee.

372. E. K. BOVERUD, County Auditor.

LABOR AND MATERIAL. [At Memphis, Tenn.

OFFICE OF SUPERVISING ARCHITECT, TREASURY DEPARTMENT, WASHINGTON, D. C., January 15, 1883.

Sealed proposals will be received at this office **until 12 M., on the 15th day of February, 1883**, for all the labor and material required in the erection of marine hospital on lots A, B, and C, bounded by Walker, Armstrong and Coffee Sts., in Memphis, Tenn., in accordance with drawings and specification, copies of which and any additional information may be had on application at this office or the office of the superintendent.

JAS. G. HILL,
369 Supervising Architect.

HARDWARE. [At St. Louis, Mo.]

OFFICE OF SUPERVISING ARCHITECT, TREASURY DEPARTMENT, WASHINGTON, D. C., January 11, 1883.

Sealed proposals will be received at this office **until 12 M., on the 3d day of February, 1883**, for furnishing and delivering at the Treasury Building, Washington, D. C., all the hardware required for the custom-house and post-office at St. Louis, Mo., in accordance with specification and schedule, copies of which and any additional information may be had on application at this office or the office of the superintendent.

JAS. G. HILL,
370 Supervising Architect.

WATER-WORKS. [At Durango, Col.]

DURANGO, COL., December 28, 1882.

Sealed proposals for constructing water-works at this town will be received **until 12 M., February 1, 1883.** Proposals will be for two systems of water-works; gravity and turbine wheel with reservoir.

Specifications and details at office of City Engineer, Durango, Col.

The right to reject any and all bids is reserved by the town of Durango.

By order of the Board of Trustees.

371 F. W. BARNES, Clerk.

IRON BRIDGE. [At Nashua, N. H.]

CITY CLERK'S OFFICE, NASHUA, N. H.

The committee on highways and bridges of the city of Nashua invite proposals for a new iron bridge across the Nashua River, on Canal St. The span is about 152′; a contemplated roadway of 22′, with sidewalks on both sides of the structure.

Committee reserve right to reject all bids. Proposals will be received **until February 1, 1883**, and shou d be addressed to

370 A. M. NORTON, Mayor.

GRANITE. [Delaware Harbor.]

U. S. ENGINEER OFFICE, 1125 GIRARD ST., PHILADELPHIA, PA., January 11, 1883.

Sealed proposals, in triplicate, will be received at this office **until 12 o'clock, noon, of Saturday, January 27, 1883**, and opened immediately thereafter, for 8,000 tons of granite, to be used in the construction of the Delaware Breakwater Harbor.

For blank forms, specifications, etc., apply to this office.

G. WEITZEL,
369 Lt.-Col. of Engineers, U. S. A.

WATER-WORKS. [At Danville, Ill.]

Proposals will be received at the office of the Water-Works Company, at Danville, Ill., **until 12 o'clock, noon, Tuesday, January 23, 1883**, for the machinery, boilers, buildings, stack, stand-pipe, pipe-laying, hydrants, valves, etc., in whole or in part, for the construction of the Danville Water-Works.

Plans and specifications can be found at the office of the Company, or will be mailed on application.

369 K. P. CORBYN, Engineer.